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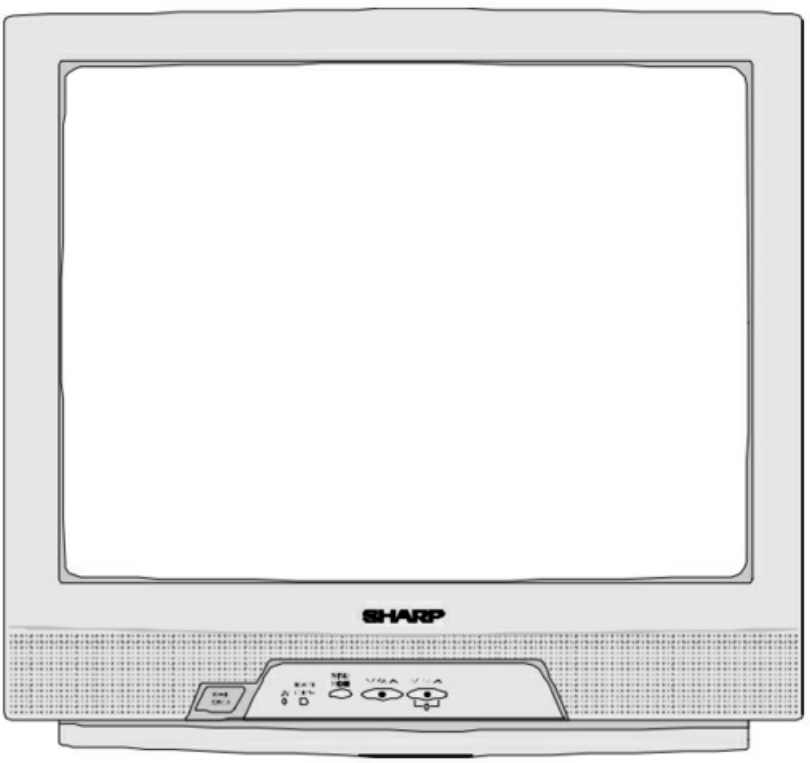
SHARP 21V-R70MM SERVICE MANUAL



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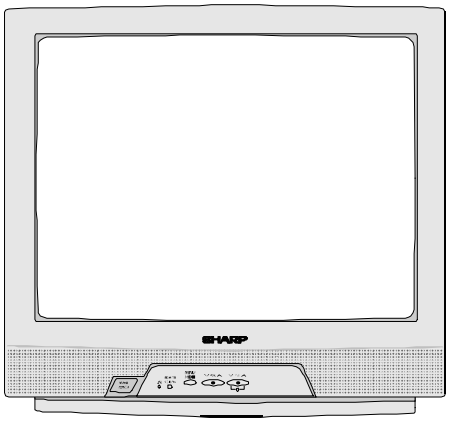
SHARP SERVICE MANUAL

S677421VR70MM



COLOUR TELEVISION
Chassis No. GA4

MODEL 21V-R70MM

In the interests of user safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts indentical to those specified should be used.

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ELECTRICAL SPECIFICATIONS

POWER INPUT.....AC 110-230 V, 50/60 Hz
POWER RATING 82W
PICTURE SIZE .....1,239 cm^2(192sq inch)
CONVERGENCE ..... Magnetic
SWEEP DEFLECTION .... Magnetic
FOCUS ..... Electrostatic
INTERMEDIATE FREQUENCIES
  Picture IF Carrier Frequency ..... 45.75 MHz
  Sound IF Carrier Frequency ..... 41.25 MHz
  Color Sub-Carrier Frequency .....42.17 MHz
  (Nominal)
AUDIO POWER
  OUTPUT RATING... ..... 3.0 W(RMS) x 1pc

SPEAKER
  SIZE ..... 2" X 3.5", 1pc
  VOICE COIL IMPEDANCE .....16 ohm at 400 Hz
ANTENNA INPUT IMPEDANCE
  VHF/UHF .....75 ohm Unbalanced
TUNING RANGES
  VHF-Channels ..... 2 thru 13
  UHF-Channels .....14 thru 69
  CATV Channels ..... 1 thru 125
  (EIA, Channel Plan U.S.A.)

Specifications are subject to change without prior notice.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

CHAPTER 1. IMPORTANT SERVICE SAFETY PRECAUTION

IMPORTANT SERVICE SAFETY PRECAUTION

■ **Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the servicing guidelines which follow:**

WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.
4. The chassis in this receiver has two ground systems which are separated by insulating material. The non-isolated (hot) ground system is for the B+ voltage regulator circuit and the horizontal output circuit. The isolated ground system is for the low B+ DC voltages and the secondary circuit of the high voltage transformer.
   To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage anode completely.

X-RADIATION AND HIGH VOLTAGE LIMITS

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation, if the high voltage is as specified in the "High Voltage Check" instructions.
   It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube including the lead in the glass material. The important precaution is to keep the high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter.
   The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value –no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and;also, under certain conditions, may produce radiation in exceeding of desirable levels.
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.
5. Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessive high voltage, avoid being unnecessarily close to the receiver.
   Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

IMPORTANT SERVICE SAFETY PRECAUTION

(Continued)

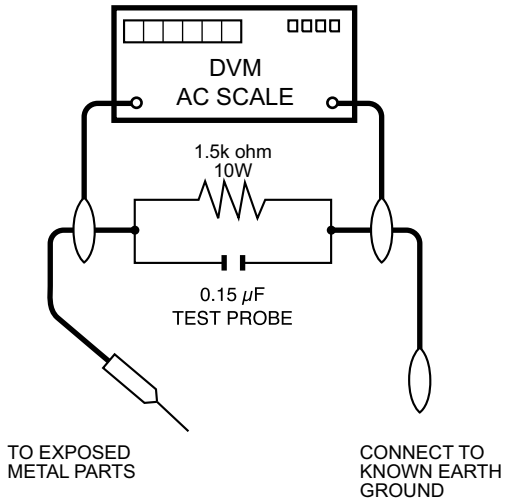
BEFORE RETURNING THE RECEIVER

(Fire & Shock Hazard)

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

- Plug the AC cord directly into a 110~230 volt AC outlet, (Do not use an isolation transformer for this test).
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to earth ground.
- Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.
- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.
  All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a non-polarized adapter plug must be used only for the purpose of completing these check.)
  Any current measured must not exceed 0.5 milliamp.
  Any measurements not within the limits outlined above indicate of a potential shock hazard and corrective action must be taken before returning the instrument to the customer.



SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.
Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

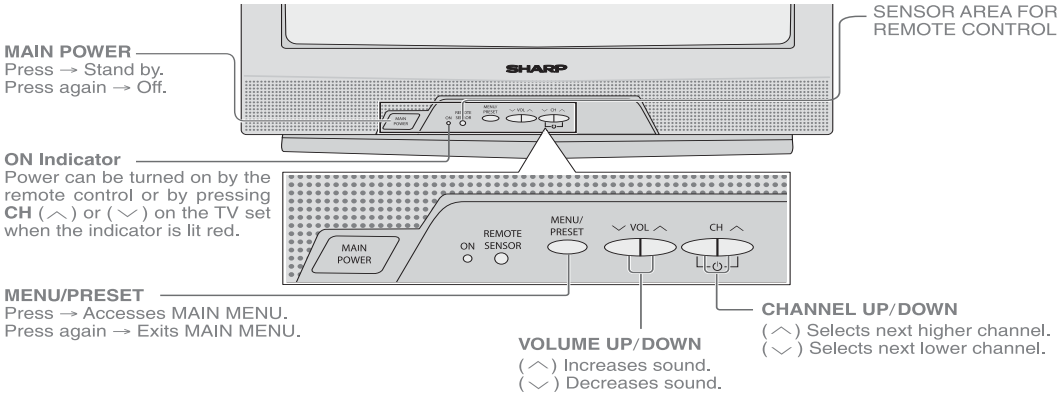
For continued protection, replacement parts must be identical to those used in the original circuit. The use of substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

CHAPTER 2. LOCATION OF USER'S CONTROL

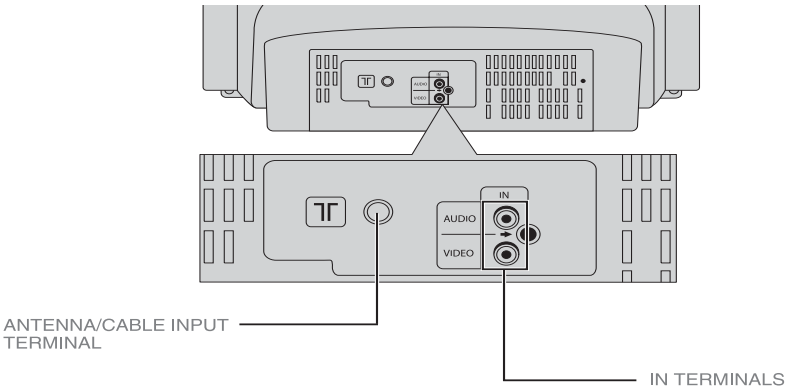
[1] LOCATION OF USER'S CONTROL

Location of Controls

Front Panel


SENSOR AREA FOR REMOTE CONTROL
MAIN POWER
Press → Stand by.
Press again → Off.
ON Indicator
Power can be turned on by the remote control or by pressing CH (∧) or (∨) on the TV set when the indicator is lit red.
MENU/PRESET
Press → Accesses MAIN MENU.
Press again → Exits MAIN MENU.
VOLUME UP/DOWN
(∧) Increases sound.
(∨) Decreases sound.
CHANNEL UP/DOWN
(∧) Selects next higher channel.
(∨) Selects next lower channel.
SHARP
MAIN POWER
REMOTE SENSOR
MENU/ PRESET
VOL
CH

Rear Panel



CHAPTER 3. INSTALLATION AND SERVICE INSTRUCTIONS

INSTALLATION AND SERVICE INSTRUCTIONS

Note: (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdrivers or TV alignment tools.
(2) Before performing adjustments, the TV set must be on at least 15 minutes.

CIRCUIT PROTECTION

The receiver is protected by a 3.15A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, B+ system, test the X-Radiation protection circuit to ascertain proper operation as follows:

1. Apply 110~230V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and adjust all customer controls for normal picture and sound.
3. Receive a good local channel.
4. Connect a digital voltmeter to P603 pin3 and make sure that the voltmeter reads 20 ±1.1V.
5. Apply external 27V DC at P603 pin3 by using an external DC supply, TV must be shut off.
6. To reset the protector, unplug the AC cord and make a short circuit between P603 pin1 and P603 pin2. Now make sure that normal picture appears on the screen.
7. If the operation of the horizontal oscillator does not stop in step 5, the circuit must be repaired before the set is returned to the customer.

HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

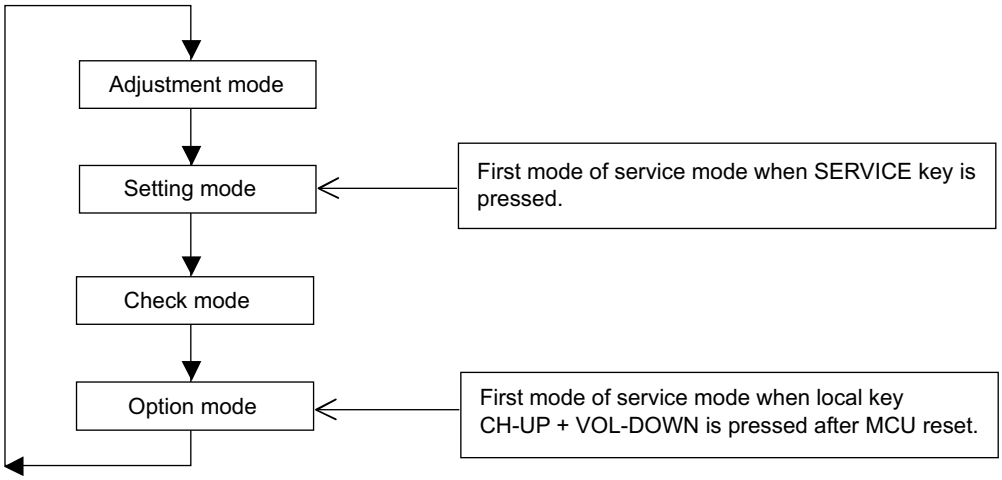
1. Connect an accurate high voltage meter between ground and anode of picture tube.
2. Operate receiver for at least 15 minutes at 110~230V AC line voltage, with a strong air signal or a properly tuned in test signal.
3. Enter the service mode and set Y-mute ON by using Service R/C.
4. The voltage should be approximately 28.7kV (at zero beam).
   If a correct reading cannot be obtained, check circuitry for malfunctioning components. After the voltage test, make Y-mute off to the normal mode.

CHAPTER 4. SERVICE MODE

SERVICE MODE

Service Mode Overview

1. Service mode is entered by SERVICE key input or CH-UP +VOL-DOWN input during reset.
2. Service mode is cleared by entering SERVICE key command during service mode.
3. If key input port (SERVICE) input is LOW, then it is in service mode.
4. During key input port (SERVICE) input is LOW, clearing service mode by key input SERVICE is disabled.
5. Service mode can be switched to 4 modes as follows by key input MENU;


Adjustment mode
Setting mode
First mode of service mode when SERVICE key is pressed.
Check mode
Option mode
First mode of service mode when local key CH-UP + VOL-DOWN is pressed after MCU reset.

6. AFT processing is disabled during service mode. PLL setting data is set to fo data.
7. All user data are set to default during service mode. FAO and SPEAKER user settings are off and on respectively in service mode. Energy Save is off.
8. Sleep timer, View timer, on timer and off timer are inactivated in Service mode.
9. Sound is muting in service mode except at Adjustment Items V20, M01, M03, M04, M05, and M06.

Adjustment Mode Items

No.	Item Name	IC	Register	Range	Default
V01	SUB-PICTURE	1 Chip	CONTRAST	0~127	127
V02	SUB-TINT	1 Chip	TINT	0~127	64
V03	SUB-COLOR	1 Chip	COLOR	0~127	64
V04	SUB-BRIGHT	1 Chip	BRIGHT	0~255	128
V05	SUB-SHARP	1 Chip	VIDEO-TONE	0~63	32
V06	V-SHIFT	1 Chip	V-SHIFT	0~7	4
V07	H-SHIFT	1 Chip	H-PHASE	0~31	16
V08	RF-AGC	1 Chip	RF-DELAY	0~127	127
V09	V-SIZE	1 Chip	V-SIZE	0~63	32
V10	PIF-VCO	1 Chip	VIF-VCO	0~63	32
V11	R-CUTOFF	1 Chip	R-CUTOFF	0~255	127
V12	G-CUTOFF	1 Chip	G-CUTOFF	0~255	127
V13	B-CUTOFF	1 Chip	B-CUTOFF	0~255	127
V14	R-DRIVE	1 Chip	R-DRIVE	0~127	64
V15	B-DRIVE	1 Chip	B-DRIVE	0~127	64
V16	SUB-COLOR(YUV)	1 Chip	COLOR	0~127	64
V17	SUB-TINT(YUV)	1 Chip	BASEBAND-TINT	0~127	64
V18	CC-POS	MICON	CC-POS	0~255	32
V19	SCREEN CUT OFF	1 Chip	CUT OFF	0~2	0
V20	SUB-VOL	1 Chip	A-ATT	0~127	127
V21	H-VCO	1 Chip	H-VCO	0~7	4
M01	MTS-ATT	MTS	ATT (MTS)	0~15	10
M02	MTS-VCO	MTS	VCO (MTS)	0~63	32
M03	MTS-FILTER	MTS	FILTER (MTS)	0~63	28
M04	MTS-WIDEBAND	MTS	WIDEBAND (MTS)	0~63	27
M05	MTS-SPECTRAL	MTS	SPECTRAL (MTS)	0~63	32
M06	SUB-VOL	MTS	VOL (MTS)	0~63	63

■ SELF ADJUSTMENT

H-VCO

1. When there is H-VCO self-adjustment key input for adjustment item H-VCO, self-adjustment is performed.
2. H-FREE(1chip) is set to 1.
3. H-OUT is set by intelligent monitor output.
4. IM input is set as TIM input.
5. H-VCO(1chip) data is changed so that the number of input pulse is 125 inside 8ms interval.
6. When adjustment completed, OSD display and H-VCO self-adjustment status data of EEPROM are updated.
7. H-FREE(1chip), intelligent monitor output and IM input mode are recovered.

RF-AGC

1. When there is RF-AGC self-adjustment key input for adjustment item RF-AGC, self-adjustment is performed.
2. AGC-OUT is set by intelligent monitor output.
3. IM input is set as AD input.
4. By decreasing RF-AGC (1chip) data from current RF-AGC adjustment value to 0, AFT input voltage becomes the maximum setting value.
5. Increase RF-AGC(1chip) data, when AFT input voltage is at (max. 0.3V) point, adjustment is completed.
6. When adjustment completed, OSD display and RF-AGC self-adjustment status data of EEPROM are updated.
7. Intelligent monitor output and IM input mode are recovered.

PIF-VCO

1. When there is PIF-VCO self-adjustment key input for adjustment item PIF-VCO, self-adjustment is performed.
2. VIF-DEF(1chip) is set to 1.
3. AFC is set by intelligent monitor output.
4. IM input is set as AD input.
5. VIF-VCO(1chip) data is changed so that input voltage becomes 2.5V.
6. When adjustment completed, OSD display and PIF-VCO self-adjustment status data of EEPROM are updated.
7. VIF-DEF(1chip), intelligent monitor output and IM input mode are recovered.

Setting Mode Items

No.	Item Name	IC	Register	Range	Default
F01	VIDEO TONE -GAIN (TV)	1 Chips	V-TONE	0/1	0
F02	VIDEO TONE -GAIN (AV)	1 Chips	V-TONE	0/1	0
F03	VIDEO TONE -GAIN (S-AV)	1 Chips	V-TONE	0/1	0
F04	VIDEO TONE -GAIN(YUV)	1 Chips	V-TONE	0/1	0
F05	ABCL	1 Chips	ABCL	0/1	0
F06	BS	1 Chips	BS-OFF	0/1	0
F07	ABCL-G	1 Chips	ABCL-G	0/1	0
F08	SHP-AV	OFFSET	VIDEO-TONE(OFFSET)	-16~+16	0
F09	SHP-SAV	OFFSET	VIDEO-TONE(OFFSET)	-16~+16	0
F10	SHP-YUV	OFFSET	VIDEO-TONE(OFFSET)	-16~+16	0
F11	RGB-CLIP	1 Chips	EXTRGB-CLIP	0/1	0
F12	E-SAVE	OFFSET	CONTRAST(OFFSET)	0~63	30
F13	FAO-VOL	1 Chips	A-ATT	0~127	120
F14	PIF-G	1 Chips	VIF-GAIN	0~7	4
F15	Y-DELAY(TV)	1 Chips	Y-DELAY	0~7	0
F16	Y-DELAY(AV)	1 Chips	Y-DELAY	0~7	0
F17	Y-DELAY(SAV)	1 Chips	Y-DELAY	0~7	0
F18	Y-DELAY(YUV)	1 Chips	Y-DELAY	0~7	0
F19	TINT-AV	OFFSET	TINT(OFFSET)	-32~+32	0
F20	TINT-SAV	OFFSET	TINT(OFFSET)	-32~+32	0
F21	COL-AV	OFFSET	COLOR(OFFSET)	-32~+32	0
F22	COL-SAV	OFFSET	COLOR(OFFSET)	-32~+32	0
F23	R-DRI(R2)	OFFSET	R-DRI(OFFSET)	-32~+32	0
F24	R-DRI(R)	OFFSET	R-DRI(OFFSET)	-32~+32	0
F25	R-DRI(B)	OFFSET	R-DRI(OFFSET)	-32~+32	0
F26	B-DRI(R2)	OFFSET	B-DRI(OFFSET)	-32~+32	0
F27	B-DRI(R)	OFFSET	B-DRI(OFFSET)	-32~+32	0
F28	B-DRI(B)	OFFSET	B-DRI(OFFSET)	-32~+32	0
F29	V-FREE	1 Chips	V-FREE	0/1	0
F30	GAMMA	1 Chips	GAMMA	0~3	0
F31	TRAP(TV)	1 Chips	TRAP-FINE	0~3	2
F32	TRAP(AV)	1 Chips	TRAP-FINE	0~3	2
F33	H-FREE	1 Chips	H-FREE	0/1	0
F34	1W(TV)	1 Chips	V.WINDOW	0/1	0
F35	1W(AV)	1 Chips	V.WINDOW	0/1	0
F36	YLPF	1 Chips	YSW-LPF	0/1	1
F37	BS-D	1 Chips	BS-DISCHARGE	0~3	0
F38	BS-C	1 Chips	BS-CHARGE	0~3	0
F39	SL(TV)	1 Chips	S-SLICE DOWN	0~3	0
F40	SL(AV)	1 Chips	S-SLICE DOWN	0~3	0
F41	SL(SAV)	1 Chips	S-SLICE DOWN	0~3	0
F42	SL(YUV)	1 Chips	S-SLICE DOWN	0~3	0
F43	AFC2	1 Chips	AFC2-G	0/1	0
F44	VD(TV)	1 Chips	VSYNC-DET	0/1	0
F45	VD(AV)	1 Chips	VSYNC-DET	0/1	0
F46	AS(TV)	1 Chips	AUTO-SLICE	0/1	0
F47	AS(AV)	1 Chips	AUTO-SLICE	0/1	0
F48	AS(SAV)	1 Chips	AUTO-SLICE	0/1	0
F49	AS(YUV)	1 Chips	AUTO-SLICE	0/1	0
F50	FBP(TV)	1 Chips	FBP VTH	0/1	0
F51	FBP(AV)	1 Chips	FBP VTH	0/1	0
F52	FBP(SAV)	1 Chips	FBP VTH	0/1	0
F53	FBP(YUV)	1 Chips	FBP VTH	0/1	0
F54	C.CLIP LEVEL	1 Chips	C.CLIP LEVEL	0/1	0

Setting Mode Items (Continued)

No.	Item Name	IC	Register	Range	Default
F55	PSW	MTS	PSW	0/1	0
F56	FAO-VOL	MTS	VOL	0~63	60
F57	CP	PLL	CHARGE PUMP	0/1	0
F58	CC LEVEL	MICON	CC LEVEL	0/1	0
F59	OSD POS	MICON	OSD POS	0/1	0
F60	OFFSET-ADJ-COL	1 Chips	COLOR	-32~+32	0
F61	OFFSET-ADJ-TINT	1 Chips	TINT	-32~+32	0
F62	OFFSET-ADJ-TINT-YUV	1 Chips	BASEBAND-TINT	-32~+32	0
F63	TIMER4-LOW SPEED	1 Chips	TIMER4 VALUE	0~225	50
F64	TIMER4-HIGH SPEED	1 Chips	TIMER4 VALUE	0~225	125
F65	R-CUT-YUV	1 Chips	R-CUT(OFFSET)	-63~+63	0
F66	G-CUT-YUV	1 Chips	G-CUT(OFFSET)	-63~+63	0
F67	B-CUT-YUV	1 Chips	B-CUT(OFFSET)	-63~+63	0
F68	R-DRI-YUV	1 Chips	R-DRI(OFFSET)	-63~+63	0
F69	B-DRI-YUV	1 Chips	B-DRI(OFFSET)	-63~+63	0
F70	CLOCK-ADJ	1 Chips		0~25	25

Option Mode Items

No	OPTION FUNCTION	0	1	Default Data
001	DEMO	Without DEMO	With DEMO	1
002	DOWNLOAD	Without V-CHIP OP	With V-CHIP OP	0
003	V-CHIP	Without V-CHIP	With V-CHIP	0
004	SPEAKER	Without SPEAKER	With SPEAKER	1
005	FAO	Without FAO	With FAO	1
006	P.PREF	Without P.REF	With P.REF	1
007	UNIV+	Without UNIV+	With UNIV+	1
008	VIEW TIMER	Without VIEW TIMER	With VIEW TIMER	1
009	EZ-SETUP	EZ-SETUP	AUTO PRESET	0
010	PON-CH	Without POWER-ON	With POWER-ON	0
011	FAV-COL	FAV-COL	COL-TEMP	1
012	COMPONENT	Without COMPONENT	With COMPONENT	1
013	AV	Without AV	With AV	1
014	AV2	AV1 system	AV2 system	1
015	MTS	Without MTS	With MTS	1
016	TONE-CTRL	Without S-ADJ	With S-ADJ	1
017	AUTO-OFF	Without AUTO-OFF	With AUTO-OFF	1
018	INIT-LANG	ENGLISH	SPANISH	1
019	SETUP-FLAG	NO SET UP	AUTO SET UP	1
020	AV-FR	"0"=NO AV "1"=REAR "2"=FRONT "3"=REAR & FRONT		3
021	AV3/S-IN	Without AV3/S-IN	With AV3/S-IN	0
022	COMB	Without COMB	With COMB	0
023	AUTO-INPUT	Without AUTO-INPUT	With AUTO-INPUT	1
024	CLOCK	Without CLOCK	With CLOCK	1
025	LED	SEMEX MODEL	SPC MODEL	0
026	FLAT	Not FLAT MODEL	FLAT MODEL	1
027	BASS BOOST	Without BASS BOOST	With BASS BOOST	0
028	DSE	Without DSE	With DSE	0
029	SRS	Without SRS	With SRS	0
030	WHITE-OUT	Without WHITE-OUT	With WHITE-OUT	1

Check Mode

Micron mask version, software version and ROM correction function status are displayed in check mode.

CHAPTER 5. ADJUSTMENT METHOD

Memory Map Data

Caution: to get into the service mode, one of the ways is press direct key for service items.

There is three stage of Service Mode data
First stage data from V01 ~ M06
to go into second stage of service mode data, press MENU key
Second stage data from F01 ~ F70
to go into third stage of service mode data, press MENU key
Third stage data from O01 ~ O30

Below is the contents of these data

First Stage

Data	Service Mode	Function	Range	Default Data	Setting Data
V01	SUB-PICTURE	CONTRAST	0~127	127	127
V02	SUB-TINT	TINT	0~127	64	54
V03	SUB-COLOR	COLOR	0~127	64	35
V04	SUB-BRIGHT	BRIGHT	0~255	128	127
V05	SUB-SHARP	VIDEO-TONE	0~63	43	45
V06	V-SHIFT	V-SHIFT	0~7	4	2
V07	H-SHIFT	H-PHASE	0~31	16	11
V08	RF-AGC	RF-DELAY	0~127	127	127
V09	V-SIZE	V-SIZE	0~63	32	40
V10	PIF-VCO	VIF-VCO	0~63	32	32
V11	R-CUTOFF	R-CUTOFF	0~255	127	127
V12	G-CUTOFF	G-CUTOFF	0~255	127	127
V13	B-CUTOFF	B-CUTOFF	0~255	127	127
V14	R-DRIVE	R-DRIVE	0~127	64	64
V15	B-DRIVE	B-DRIVE	0~127	64	64
V16	SUB-COLOR(YUV)	COLOR	0~127	64	64
V17	SUB-TINT(YUV)	BASEBAND-TINT	0~127	64	64
V18	CC-POS	CC-POS	0~255	32	32
V19	SCREEN CUTOFF	CUTOFF	0~2	0	0
V20	SUB-VOL	A-ATT	0~127	127	127
V21	H-VCO	H-VCO	0~7	4	4
M01	MTS-ATT	ATT (MTS)	0~15	10	10
M02	MTS-VCO	VCO (MTS)	0~63	32	32
M03	MTS-FILTER	FILTER (MTS)	0~63	28	28
M04	MTS-WIDEBAND	WIDEBAND (MTS)	0~63	27	27
M05	MTS-SPECTRAL	SPECTRAL (MTS)	0~63	32	32
M06	SUB-VOL	VOL (MTS)	0~63	63	63

Auto Adjustment Item
1. H-VCO
2. RF-AGC
3. PIF-VCO

Second Stage

Data	Service Mode	Function	Range	Default Data	Setting Data
F01	VIDEO-TONE-GAIN (TV)	V-TONE	0/1	0	0
F02	VIDEO-TONE-GAIN (AV)	V-TONE	0/1	0	0
F03	VIDEO-TONE-GAIN (S-AV)	V-TONE	0/1	0	0
F04	VIDEO-TONE-GAIN (YUV)	V-TONE	0/1	0	0
F05	ABCL	ABCL	0/1	0	0
F06	BS	BS-OFF	0/1	0	0
F07	ABCL-G	ABCL-G	0/1	0	0
F08	SHP-AV	VIDEO-TONE(OFFSET)	-16~+16	0	0
F09	SHP-SAV	VIDEO-TONE(OFFSET)	-16~+16	0	0
F10	SHP-YUV	VIDEO-TONE(OFFSET)	-16~+16	0	0
F11	RGB-CLIP	EXTRGB-CLIP	0/1	0	0
F12	E-SAVE	CONTRAST(OFFSET)	0~63	30	30
F13	FAO-VOL	A-ATT	0~127	120	120
F14	PIF-G	VIF-GAIN	0~7	4	4
F15	Y-DELAY(TV)	Y-DELAY	0~7	0	5
F16	Y-DELAY(AV)	Y-DELAY	0~7	0	2
F17	Y-DELAY(SAV)	Y-DELAY	0~7	0	0
F18	Y-DELAY(YUV)	Y-DELAY	0~7	0	0
F19	TINT-AV	TINT(OFFSET)	-32~+32	0	-2
F20	TINT-SAV	TINT(OFFSET)	-32~+32	0	0
F21	COL-AV	COLOR(OFFSET)	-32~+32	0	+2
F22	COL-SAV	COLOR(OFFSET)	-32~+32	0	0
F23	R-DRI(R2)	R-DRI(OFFSET)	-32~+32	0	+8
F24	R-DRI(R)	R-DRI(OFFSET)	-32~+32	0	+3
F25	R-DRI(B)	R-DRI(OFFSET)	-32~+32	0	-2
F26	B-DRI(R2)	B-DRI(OFFSET)	-32~+32	0	-18
F27	B-DRI(R)	B-DRI(OFFSET)	-32~+32	0	-8
F28	R-DRI(B)	R-DRI(OFFSET)	-32~+32	0	+6
F29	V-FREE	V-FREE	0/1	0	0
F30	GAMMA	GAMMA	0~3	0	1
F31	TRAP (TV)	TRAP-FINE	0~3	2	2
F32	TRAP (AV)	TRAP-FINE	0~3	2	2
F33	H-FREE	H-FREE	0/1	0	0
F34	1W(TV)	V.WINDOW	0/1	0	0
F35	1W(AV)	V.WINDOW	0/1	0	1
F36	YLPF	YSW-LPF	0/1	1	1
F37	BS-D	BS-DISCHARGE	0~3	0	0
F38	BS-C	BS-CHARGE	0~3	0	0
F39	SL(TV)	S-SLICE DOWN	0~3	0	1
F40	SL(AV)	S-SLICE DOWN	0~3	0	1
F41	SL(SAV)	S-SLICE DOWN	0~3	0	0
F42	SL(YUV)	S-SLICE DOWN	0~3	0	0
F43	AFC2	AFC2-G	0/1	0	0
F44	VD(TV)	VSYNC-DET	0/1	0	1
F45	VD(AV)	VSYNC-DET	0/1	0	0
F46	AS(TV)	AUTO-SLICE	0/1	0	1
F47	AS(AV)	AUTO-SLICE	0/1	0	1
F48	AS(SAV)	AUTO-SLICE	0/1	0	0
F49	AS(YUV)	AUTO-SLICE	0/1	0	0
F50	FBP(TV)	FBP VTH	0/1	0	0
F51	FBP(AV)	FBP VTH	0/1	0	0
F52	FBP(SAV)	FBP VTH	0/1	0	0
F53	FBP(YUV)	FBP VTH	0/1	0	0
F54	C.CLIP LEVEL	C.CLIP LEVEL	0/1	0	0
F55	PSW	PSW	0/1	0	0
F56	FAO-VOL	VOL	0~63	60	58
F57	CP	CHARGE PUMP	0/1	0	1
F58	CC LEVEL	CC LEVEL	0~31	0	0
F59	OSD POS	OSD POS	0/1	0	0
F60	OFFSET-ADJ-COL	COLOR	-32~+32	0	+10
F61	OFFSET-ADJ-TINT	TINT	-32~+32	0	+8
F62	OFFSET-ADJ-TINT-YUV	BASEBAND-TINT	-32~+32	0	-12
F63	TIMER4-LOW SPEED	TIMER4 VALUE	0~255	50	50
F64	TIMER4-HIGH SPEED	TIMER4 VALUE	0~255	125	125

F65	R-CUT-YUV	R-CUT(OFFSET)	-63~+63	0	0
F66	G-CUT-YUV	G-CUT(OFFSET)	-63~+63	0	+36
F67	B-CUT-YUV	B-CUT(OFFSET)	-63~+63	0	+2
F68	R-DRI-YUV	R-DRI(OFFSET)	-63~+63	0	0
F69	B-DRI-YUV	B-DRI(OFFSET)	-63~+63	0	0
F70	CLOCK-ADJ		0~25	25	25

Third stage

Data	OPTION FUNCTION	DATA = " 0"	DATA =" 1"	Default Data	Setting Data
O01	DEMO	DEMO DISABLE	ENABLE	1	1
O02	DOWNLOAD	V-CHIP OP DISABLE	ENABLE	0	0
O03	V-CHIP	V-CHIP DISABLE	ENABLE	0	0
O04	SPEAKER	SPEAKER DISABLE	ENABLE	1	0
O05	FAO	FAO DISABLE	ENABLE	1	0
O06	P.PREF	P.REF DISABLE	ENABLE	1	0
O07	UNIV+	UNIV+ DISABLE	ENABLE	1	0
O08	VIEW TIMER	VIEW TIMER DISABLE	ENABLE	1	1
O09	EZ-SETUP	EZ-SETUP	AUTO PRESET	0	0
O10	* PON-CH	POWER-ON DISABLE	ENABLE	0	1
O11	FAV-COL	FAV-COL	COL-TEMP	1	1
O12	COMPONENT	COMPONENT DISABLE	ENABLE	1	0
O13	AV	AV DISABLE	ENABLE	1	1
O14	AV2	AV1	AV2	1	0
O15	MTS	MTS DISABLE	ENABLE	1	0
O16	TONE-CTRL	S-ADJ DISABLE	ENABLE	1	1
O17	AUTO-OFF	AUTO-OFF DISABLE	ENABLE	1	1
O18	INIT-LANGUAGE	ENGLISH	SPANISH	1	1
O19	SETUP-FLAG	NO SET UP	AUTO SET UP	1	0
O20	AV-FR	"0"=NO AV "1"=REAR "2"=FRONT "3"=REAR & FRONT		3	1
O21	AV3/S-IN	AV3/S-IN DISABLE	ENABLE	0	0
O22	COMB	COMB DISABLE	ENABLE	0	0
O23	AUTO-INPUT	AUTO-INPUT DISABLE	ENABLE	1	0
O24	CLOCK	CLOCK DISABLE	ENABLE	1	0
O25	LED	SEMEX MODEL	SPC MODEL	0	1
O26	FLAT	FLAT DISABLE	ENABLE	1	0
O27	BASS BOOST	BASS BOOST DISABLE	ENABLE	0	0
O28	DSE	DSE DISABLE	ENABLE	0	0
O29	SRS	SRS DISABLE	ENABLE	0	0
O30	WHITE-OUT	WHITE-OUT DISABLE	ENABLE	1	0

* POWER ON BY CH-UP / DOWN KEY.

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	OPTION SET UP		
ADJUSTMENT POSITION		STEP RANGE	REFER AS BELOW
CONTROL			
PRE-ADJUST REQUIREMENT			
CONTENT			
INPUT CONDITION	21V-R70MM		
OUTPUT	OSD CHECKING		

ADJUSTMENT PROCEDURE

BUS OPTION FOR THIRD STAGE SERVICE DATA

FUNCTION	O01 DEMO	O02 DOWNLOAD	O03 V-CHIP	O04 SP	O05 FAO	O06 P.PREF	O07 UNIV+	O08 VIEW	O09 EZ	O10 PON-CH
21V-R70MM	1	0	0	0	0	0	0	1	0	1
DEF	"0"= DISABLE "1"=ENABLE 009 --> "0"= EZ-SETUP "1"= AUTO PRESET									

BUS OPTION FOR THIRD STAGE SERVICE DATA

FUNCTION	O11 FAV-COL	O12 COMP	O13 AV	O14 AV2	O15 MTS	O16 TONE	O17 AUTO	O18 Init-LANG	O19 SETUP	O20 AV-FR
21V-R70MM	1	0	1	0	0	1	1	1	0	1

FUNCTION	O21 AV3	O22 COMB	O23 A-IN	O24 CLOCK	O25 LED	O26 FLAT	O27 BASS	O28 DSE	O29 SRS	O30 WHITE
21V-R70MM	0	0	0	0	1	0	0	0	0	0

DEF	O11 --> "0" =FAV-COL "1"= COL-TEMP O18--> "0"= ENGLISH "1" = SPANISH O19--> "0"= NO SET UP "1" = AUTO SETUP O20--> "0"=NO AV "1"=REAR "2"=FRONT "3"=REAR&FRONT

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	BUS SET UP		
ADJUSTMENT POSITION		STEP RANGE	REFER AS BELOW
CONTROL			
PRE-ADJUST REQUIREMENT			
CONTENT			
INPUT CONDITION	21V-R70MM		
OUTPUT	OSD CHECKING		

ADJUSTMENT PROCEDURE

DATA SETUP FOR FIRST AND SECOND STAGE SERVICE DATA

FUNCTION	V05 SHARP	F15 Y-DL.TV	F16 Y-DL.AV	F19 TINT-AV	F21 COL-AV	F23 R-D(R2)	F24 R-D(R)	F25 R-D(B)	F26 B-D(R2)	F27 B-D(R)
21V-R70MM	45	5	2	-2	2	+8	+3	-2	-18	-8
FUNCTION	F28 B-D(B)	F30 GAMMA	F35 1W(AV)	F39 SL(TV)	F40 SL(AV)	F44 VD(TV)	F46 AS(TV)	F47 AS(AV)	F56 FAO-VOL	F57 CP
21V-R70MM	+6	1	1	1	1	1	1	1	58	1
FUNCTION	F60 C-OF	F61 TINT-OF	F62 TI-YUV	F66 G-C-YUV	F67 B-C-YUV	F36 YLPF				
21V-R70MM	+10	+8	-12	+36	+2	1				
DEF										

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	H-POSITION		
ADJUSTMENT POSITION	V07	STEP RANGE	
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP,CRT-PURITY		
CONTENT	US 4 CH LION HEAD (MONOSCOPE)		
INPUT CONDITION	AC 220V, US MAGNETIC FIELD		
OUTPUT	CONFIRMATION BY CRT SCREEN		
ADJUSTMENT PROCEDURE	1.ADJUST THE V07 BUS DATA TO HAVE A BALANCE POSITION TO SPEC OF A=B. 2.IF CANNOT MAKE IT TO A=B, ADJ FROM THE BEST POINT SO THAT B SLIDELY SMALLER THAN A 		
	[CHECKING SPEC] LEFT AND RIGHT SYMMETRICAL		

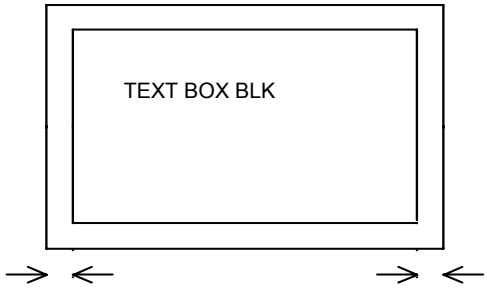
HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	V-SIZE		
ADJUSTMENT POSITION	V09	STEP RANGE	
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP,CRT PURITY, V-PHASE , +B ADJUST		
CONTENT	US 4 CH LION HEAD		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION BY CRT SCREEN		
ADJUSTMENT PROCEDURE	ADJUST THE V09 BUS DATA UNTILL THE OVERSCAN BECOME AS SPECIFIED BELOW. CAUTION:- PLEASE AGING TV MORE THAN 10 MINUTES BEFORE ADJUSTMENT.		
	[CHECKING SPEC] OVERSCAN 10 ± 2.5%		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	V-PHASE		
ADJUSTMENT POSITION	V06	STEP RANGE	
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, CRT PURITY		
CONTENT	US 4 CH LION HEAD (MONOSCOPE PATTERN)		
INPUT CONDITION	220 V, RF INPUT, ZERO MAGNETIC FIELD		
OUTPUT	CONFIRMATION ON CRT SCREEN		
ADJUSTMENT PROCEDURE	ADJUST V06 BUS DATA TO HAVE A MOST ACCEPTABLE VERTICAL POSITION. THE MONOSCOPE PATTERN SHOULD BE BALANCE IN VERTICAL POSITION NOTE: THE DATA FOR V06 LIMIT AT <= 04 , EVEN POSITION NOT GOOD ENOUGH		
	[CHECKING CONFIRMATION]		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	CLOSED CAPTION SET UP		
ADJUSTMENT POSITION	V18	STEP RANGE	0 - 255
CONTROL			
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	US 4 CH LION HEAD		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION ON CRT DISPLAY.		
ADJUSTMENT PROCEDURE	1)BY SELECTING THE V18, BOX BLK TEXT WILL BE APPEARED. 2)ADJUST THE V18 BUS DATA TO HAVE A BALANCE POSITION TO SPEC OF A=B. * REDUCE 5 STEPS AFTER ADJUSTED A=B  		
	[CHECKING SPEC] LEFT AND RIGHT SYMMETRICAL.		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	H-VCO		
ADJUSTMENT POSITION	V21	STEP RANGE	0 - 7
CONTROL			
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	NO SIGNAL (RASTER) CONDITION		
INPUT CONDITION	AC 220		
OUTPUT	IC 801 PIN 11		
ADJUSTMENT PROCEDURE	(MANUAL ADJ) 1)GO TO SERVICE MODE, 2)GO TO SERVICE DATA V21, ADJ UNTIL FREQ AS BELOW (SELF ADJ) 1) GO TO SERVICE MODE, BY SELECTING THE SERVICE DATA V21 2) PRESS THE R/C TO OPERATE AUTO H-VCO, OSD APPEAR "OK" AT SCREEN 3) IF APPEAR "NG" PLS REPEAT STEP 2		
	[CHECKING SPEC] FREQ = 15.735 ± .02 KHz		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	PIF-VCO		
ADJUSTMENT POSITION	V10	STEP RANGE	0 - 63
CONTROL			
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	NO SIGNAL (RASTER) CONDITION		
INPUT CONDITION	AC 220		
OUTPUT	CONFIRMATION ON CRT DISPLAY(AUTO), IC801 PIN 2 VOLTAGE (MANUAL).		
ADJUST PROCEDURE	(AT SELF ADJUSTMENT MODE) 1)GO INTO SERVICE MODE,BY SELECTING THE SERVICE DATA V10 2)PRESS THE R/C FOR AUTO PIF-VCO KEY, OSD APPEAR "OK" AT SCREEN 3)IF APPEAR "NG" PLS REPEAT STEP 2 (AT MANUAL ADJUSTMENT MODE) 1)GO INTO SERVICE MODE, BY SELECTING THE SERVICE DATA V10 2) ADJUST THE DATA UP/DOWN UNTIL IC801 PIN 2 VOLTAGE BECOME AS SPECIFIED BELOW		
	[CHECKING SPEC] 2.5 ± 0.5 V DC (CHECKING SPEC : 2.50 ± 1.5 V)		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

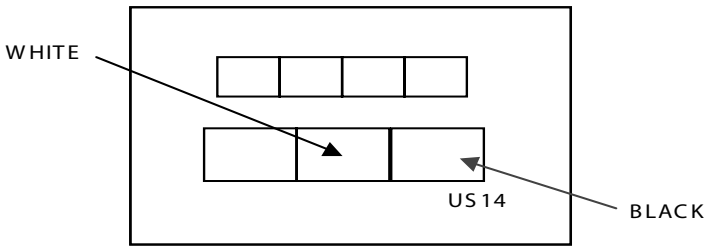
MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	RF-AGC		
ADJUSTMENT POSITION	V 08	STEP RANGE	0-127
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	US10CH HALF COLOR BAR		
INPUT CONDITION	RF INPUT FIELD STRENGTH 53dB		
OUTPUT	TUNER AGC TERMINAL (TP 201) OR CRT DISPLAY CONFIRMATION		
ADJUSTMENT PROCEDURE	(AT SELF ADJUSTMENT MODE) 1.GO TO SERVICE MODE 2.GO TO SERVICE DATA V08, PRESS R/C TO OPEARATE AUTO-AGC KEY AND CONFIRM THE OK DISPLAY ON THE SCREEN . 3.IF APPEAR NG PLS REPEAT STEP 2 AGAIN. (AT MANUAL ADJUSTMENT MODE) 1.ADJUST THE V08 BUS DATA UNTIL AGC TERMINAL VOLTAGE BECOME MAXIMUM, THEN DROP 0.1V BELOW MAXIMUM VOLTAGE. 2. CHANGE THE ANTENNA INPUT SIGNAL TO 63~67 dBuV, AND MAKE SURE THERE IS NO NOISE 3. CHANGE THE ANTENNA INPUT SIGNAL TO 90~95 dBuV TO BE SURE THAT THERE IS NO CROSS MODULATION BEAT.		
	[VOLTAGE CONFIRMATION] MAX - 0.1V dc		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

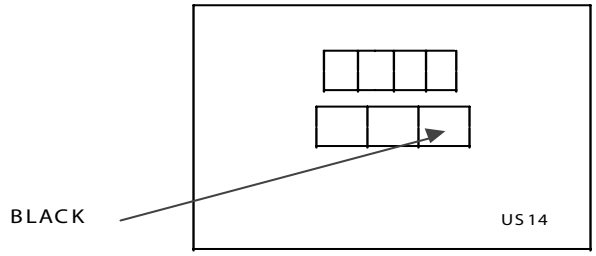
MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	SCREEN		
ADJUSTMENT POSITION	V11,V12,V13	STEP RANGE	0~255
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP		
CONTENT	WINDOW PATTERN OR US4CH LION HEAD		
INPUT CONDITION	220 V		
OUTPUT	CONFIRMATION ON CRT DISPLAY.		
ADJUSTMENT PROCEDURE	1) IN SERVICE MODE, SET V04 & V11 & V12 & V13 TO 127; V14 & V15 TO 64 , GET IN Y-MUTE BY R/C AND SET V19 TO "1", PICTURE APPEAR IN CUT-OFF CONDITION. 2)ADJUST THE SCREEN SO THAT CUT-OFF LINE APPEAR IN LOW BRIGHT, THEN JUDGE THAT WHETHER THE CUT-OFF LINE APPEAR IN RED OR GREEN OR BLUE COLOR, IN THIS CONDITION V11= R-CUTOFF,V12=G-CUTOFF,V13=B-CUTOFF, FIX THE DATA OF THE COLOR APPEAR IN CUT-OFF LINE AND USE R/C TO ADJUST THE OTHER TWO CUT-OFF DATA SO THAT CUT-OFF LINE COLOR BECOME WHITE. 3)TURN THE SCREEN VR OF FBT SO THAT CUT-OFF LINE JUST DISAPPEAR AND USE R/C TO SET V19 TO "0", NEXT DISABLE THE Y-MUTE SO THAT PICTURE APPEAR IN NORMAL MODE.		
	[VOLTAGE CONFIRMATION]		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

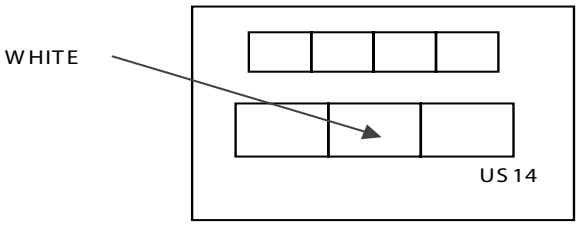
MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	WHITE BALANCE		
ADJUSTMENT POSITION	V14,V15,V11,V12,V13	STEP RANGE	0-127, 0~255
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN		
CONTENT	23CH 50IRE WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY.		
ADJUSTMENT PROCEDURE	1)WHITE (HIGH BEAM) FIRST LET THE GUN POINT AT BLACK POSITION (AS DRAWING ATTACH), ADJ V04 UNTIL BRIGHTNESS Y BECOME 5 cd/m2, THEN LET THE GUN POINT AT WHITE POSITION (AS DRAWING ATTACH),ADJUST VO1 UNTIL BRIGHTNESS Y BECOME 150 cd/m2, ADJUST THE BUS DATA OF V14(R DRIVE),V15(B DRIVE) UNTIL THE AXIS OF COLOUR TEMPERATURE BECOME X=0.273,Y=0.280. 2)BLACK (LOW BEAM) LET THE GUN POINT AT BLACK POSITION, IF THE VALUE SHIFTED AWAY FROM THE DATA ADJUSTED IN STEP 1), ADJUST AGAIN THE TWO SERVICE DATA WHICH HAVE CHOSEN AT SCREEN ADJUST SO THAT TO OBTAIN THE SIMILAR AXIS AS ABOVE. *WARNING: DO NOT DISTURB THE MINI STEP GUN DATA DURING THIS ADJUSTMENT. **REPEAT STEP 1),2) TO GET A REGULATED POSITION.		
	[CHECKING CONFIRMATION] X=0.273,Y=0.280 (11,600°K+1 MPCD)		



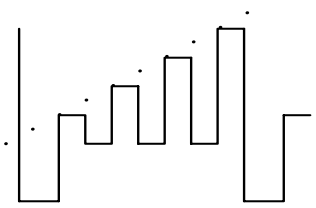
HISTORY OF REVISION	SYMBOL	REVISED CONTENT.

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	SUB-BRIGHT		
ADJUSTMENT POSITION	V04	STEP RANGE	0-255
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN, WHITE BALANCE		
CONTENT	WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY .		
ADJUSTMENT PROCEDURE	1)LET THE GUN POINT AT BLACK POSITION(AS ATTACH DRAWING), ADJUST V04 BUS DATA UNTILL BRIGHTNESS Y = 0.5 cd/m2, THEN STEP DOWN MORE 4 STEP  		
	[VOLTAGE CONFIRMATION] BRIGHTNESS Y = 0.5 cd/m2, THEN STEP DOWN MORE 4 STEP		

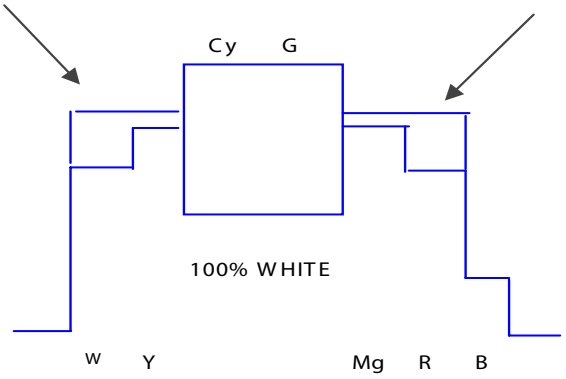
HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	SUB-PICTURE		
ADJUSTMENT POSITION	V01	STEP RANGE	0-127
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, SCREEN, WHITE BALANCE, SUB-BRIGHTNESS		
CONTENT	WINDOW PATTERN		
INPUT CONDITION	220 V		
OUTPUT	CRT SCREEN DISPLAY		
ADJUSTMENT PROCEDURE	1) LET THE GUN POINT AT WHITE POSITION (AS ATTACH DRAWING), ADJUST V01 BUS DATA UNTILL BRIGHTNESS Y = 150 cd/m2. NOTE: ALLOWABLE DATA FOR V01 IS >= 90, EVEN Y CAN'T MATCH THE SPEC  		
	[VOLTAGE CONFIRMATION] BRIGHTNESS Y = 150 cd/m2		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	SUB-TINT		
ADJUSTMENT POSITION	V02	STEP RANGE	0-127
CONTROL	I2C CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, VCO ADJ, RF-AGC		
CONTENT	US 10 CH HALF COLOR BAR PATTERN		
INPUT CONDITION	220 V		
OUTPUT	B-AMP TR BASE (TP853) CONFIRM WITH OSCILLOSCOPE		
ADJUSTMENT PROCEDURE	1)GET IN Y-MUTE FUNCTION BY R/C . 2)ADJUST THE V02 BUS DATA TO GET A WAVEFORM AS BELOW. 3) DISABLE THE Y-MUTE ** PLS TAKE NOTE THAT SERVICE MODE DATA F62 NEED TO SET +8  B-AMP BASE (TP 853)MUST BE IN STEPPING LEVEL [CONFIRMATION]		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	SUB-COLOR		
ADJUSTMENT POSITION	V03	STEP RANGE	0-127
CONTROL	I2C BUS CONTROL		
PRE-ADJUST REQUIREMENT	OPTION SET UP, BUS SET UP, VCO ADJ, RF-AGC, SUB-PICT, SUB-TNT		
CONTENT	US 10 CH HALF COLOR BAR PATTERN		
INPUT CONDITION	220 V		
OUTPUT	R-AMP TR BASE (TP851) CONFIRM WITH OSCILLOSCOPE		
ADJUSTMENT PROCEDURE	1)SET THE V03 BUS DATA TO GET A WAVEFORM AS BELOW 2)THIS WAVEFORM SHOWS THAT THE 75% WHITE & RED PORTIONS OF COLOR BAR BE AT THE SAME LEVEL ** PLS TAKE NOTE THAT SERVICE MODE DATA F60 NEED TO SET +10  		
	[CHECKING CONFIRMATION]		

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	X-RAY PROTECTION OPERATING CONFIRMATION		
ADJUSTMENT POSITION		STEP RANGE	
CONTROL			
PRE-ADJUST REQUIREMENT	AFTER ALL ADJUSTMENT FINISHED.		
CONTENT	US 4 CH LION HEAD (MONOSCOPE PATTERN)		
INPUT CONDITION	AC 220V, RF INPUT		
OUTPUT	CONFIRMATION BY THE CRT		

ADJUSTMENT PROCEDURE

SET THE USER CONTROL TO SHIPMENT POSITION.

[VOLTAGE CONFIRMATION]
CHECK THE VOLTAGE OF P603 PIN 3 AS SPECIFIED BELOW.

[OPERATION CONFIRMATION]
SUPPLY THE DC VOLTAGE TO P603 PIN 3 AND MAKE SURE THE PROTECTOR IS FUNCTIONED , HORIZONTAL OSCILATION STOP AND PICTURE DISAPPEAR.

[RECOVER INFORMATION]
PULL OUT THE AC CORD .

[CAUTION]
FROM THE RECOVER CONFIRMATION MENTIONED ABOVE,THE AC CODE MUST BE PULLED OUT AT LEAST 4 SECOND BEFORE PLUGGING IN AGAIN. (IN ORDER TO MAKE SURE THE -COM HAS BEEN RESET.)

[VOLTAGE COMFIRMATION]

	TP VOLTAGE	OPERATION VOLTAGE
21V-R70MM	26 ± 1.1V DC	27V

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

MODEL NAME	21V-R70MM		
ADJUSTMENT ITEM	HIGH VOLTAGE		
ADJUSTMENT POSITION		STEP RANGE	
CONTROL			
PRE-ADJUST REQUIREMENT	AFTER ALL ADJUSTMENT FINISHED.		
CONTENT	US 4 CH LION HEAD (MONOSCOPE PATTERN)		
INPUT CONDITION	AC 220V, RF INPUT		
OUTPUT	CRT ANODE VOLTAGE		
ADJUSTMENT PROCEDURE	SET THE USER CONTROL TO SHIPMENT SETTING POSITION.PUSH ON Y-MUTE BY R/C CONFIRM THE VOLTAGE OF CRT ANODE BY HIGH VOLTAGE METER AND MAKE SURE THE READING IS AS BELOW.		

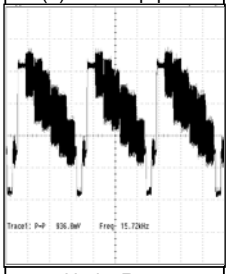
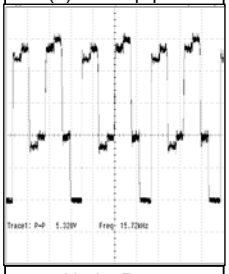
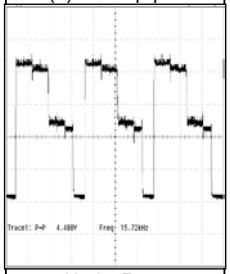
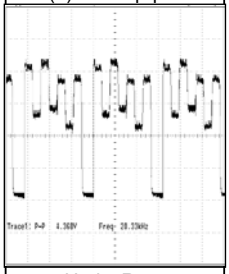
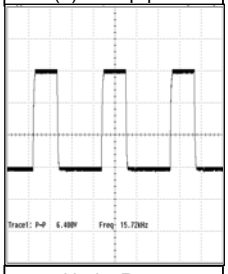
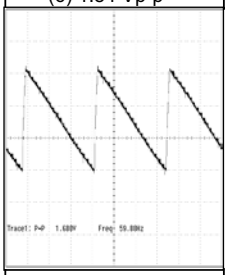
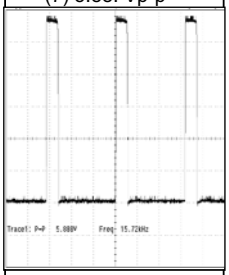
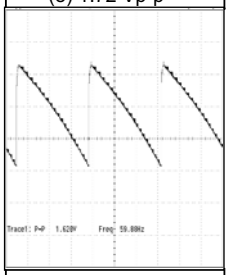
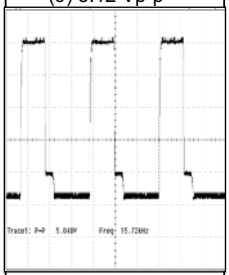
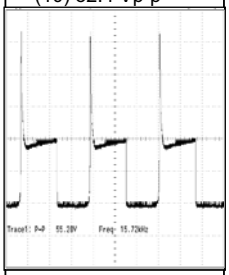
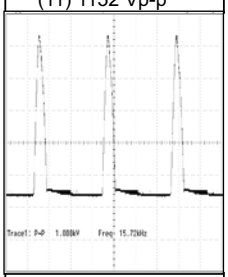
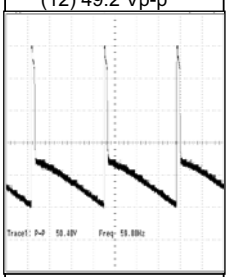
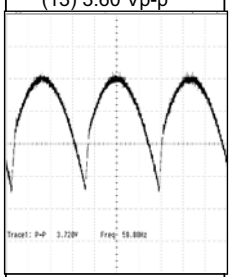
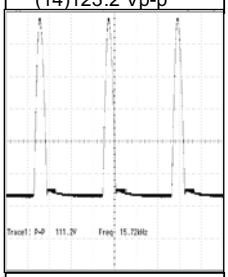
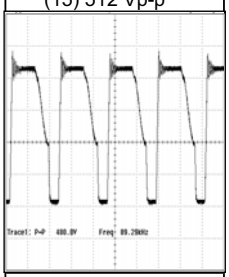
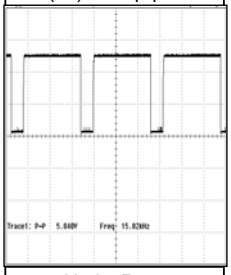
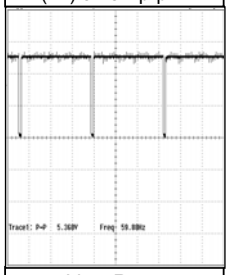
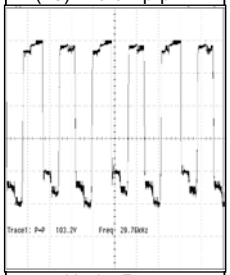
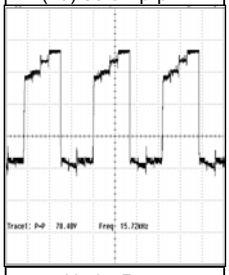
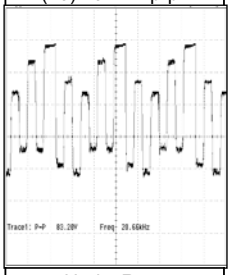
MODEL	HIGH VOLTAGE
21V-R70MM	BELOW 28.5kV

[CAUTION POINT]
USE ELECTROSTATIC HI-VOLTAGE METER AND FOLLOW THE UL / DHHS STANDARD TO MAKE CORRECTION AND CONTROL.

HISTORY OF REVISION	SYMBOL	REVISED CONTENT .

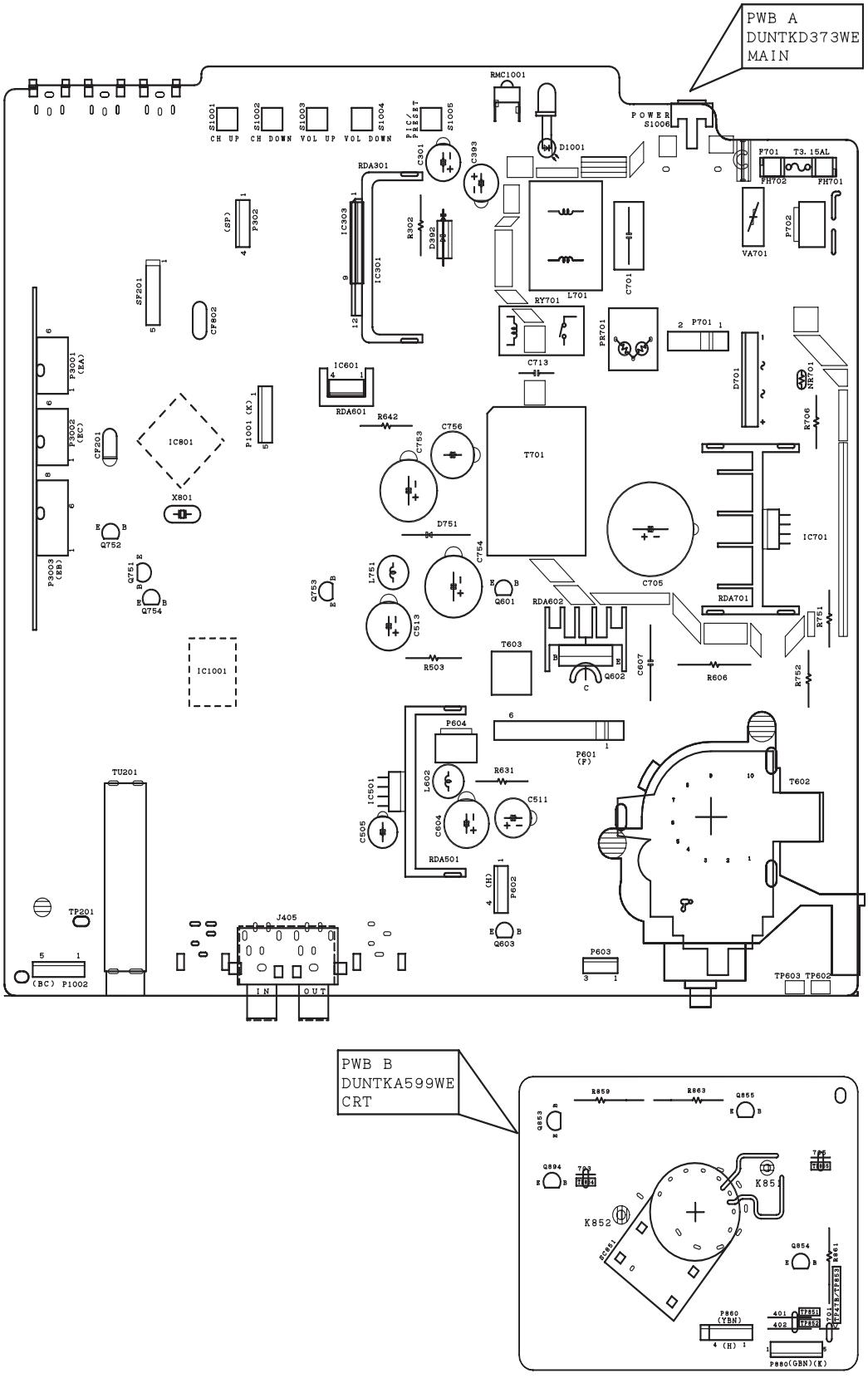
CHAPTER 6. WAVEFORMS

WAVEFORMS

(1) 0.984 Vp-p	(2) 5.36 Vp-p	(3) 4.72 Vp-p	(4) 4.98 Vp-p	(5) 6.4 Vp-p
				
Horiz. Rate	Horiz. Rate	Horiz. Rate	Horiz. Rate	Horiz. Rate
(6) 1.84 Vp-p	(7) 5.88. Vp-p	(8) 1.72 Vp-p	(9) 5.12 Vp-p	(10) 32.4 Vp-p
				
Vert. Rate	Horiz. Rate	Vert. Rate	Horiz. Rate	Horiz. Rate
(11) 1152 Vp-p	(12) 49.2 Vp-p	(13) 3.60 Vp-p	(14)123.2 Vp-p	(15) 512 Vp-p
				
Horiz. Rate	Vert. Rate	Vert. Rate	Horiz. Rate	-
(16) 5.2 Vp-p	(17) 5.28 Vp-p	(18) 110.0 Vp-p	(19) 86.0 Vp-p	(20) 104.2 Vp-p
				
Horiz. Rate	Vert. Rate	Horiz. Rate	Horiz. Rate	Horiz. Rate

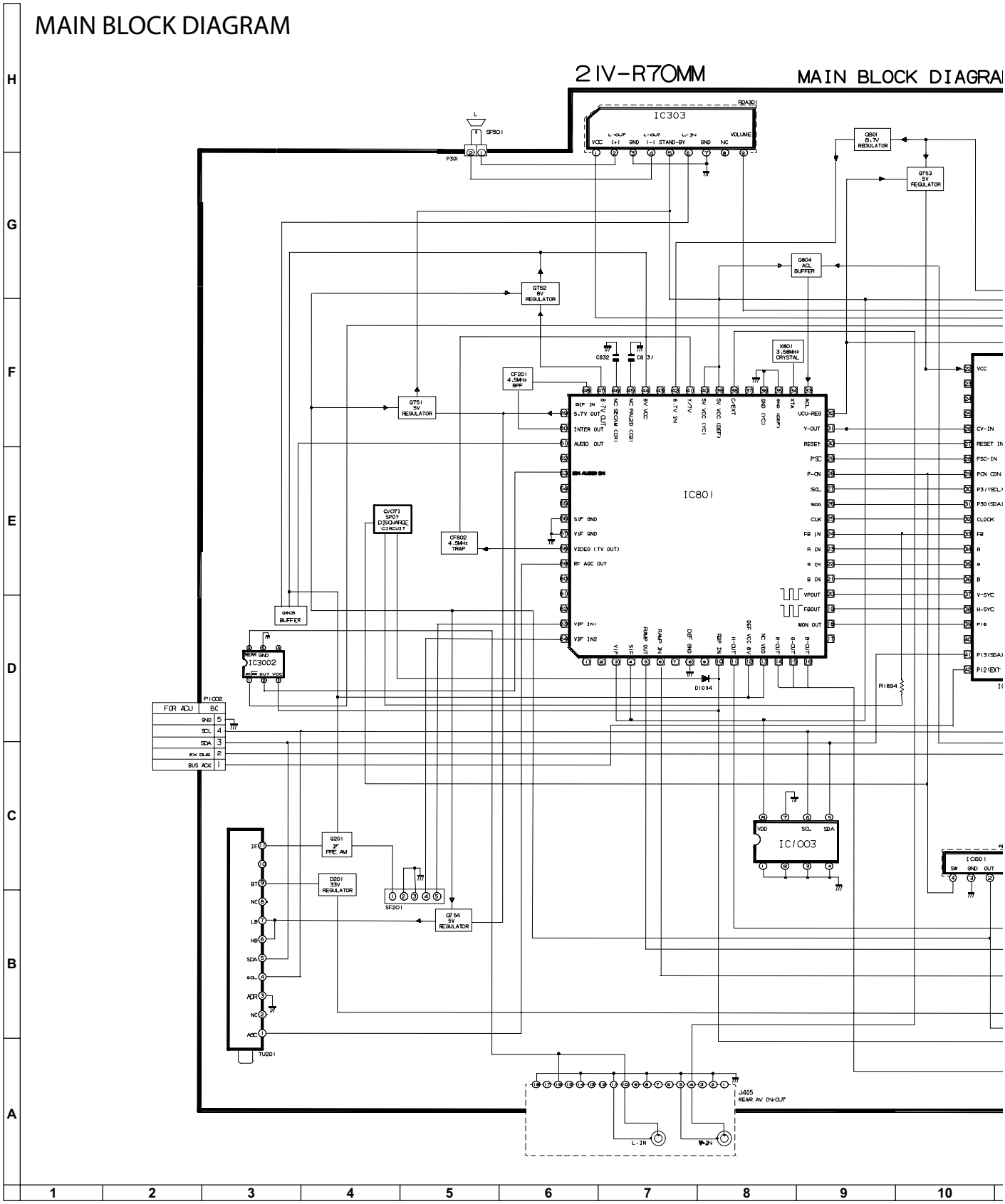
CHAPTER 7. CHASSIS LAYOUT

CHASSIS LAYOUT

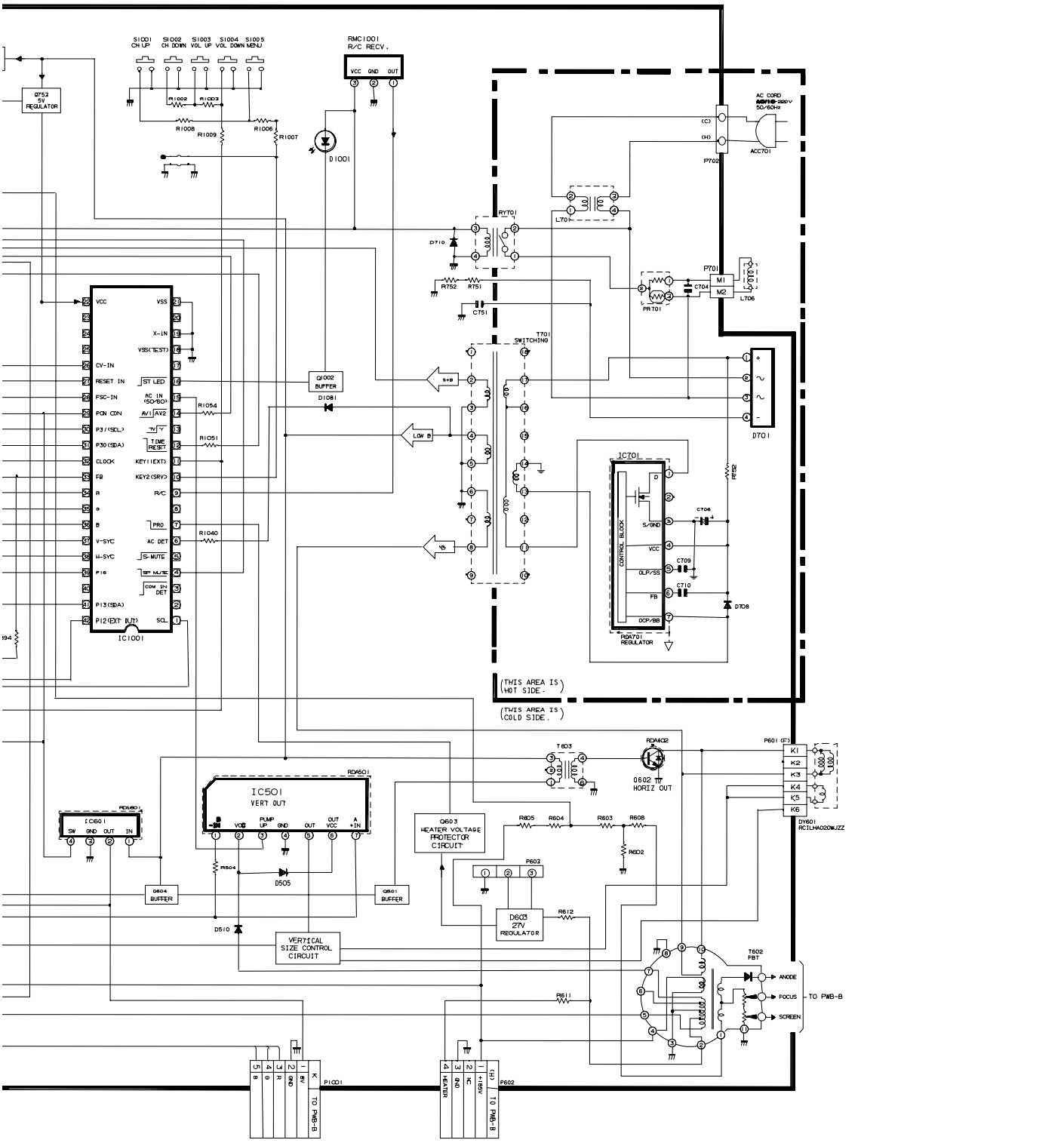


CHAPTER 8. BLOCK DIAGRAM

MAIN BLOCK DIAGRAM

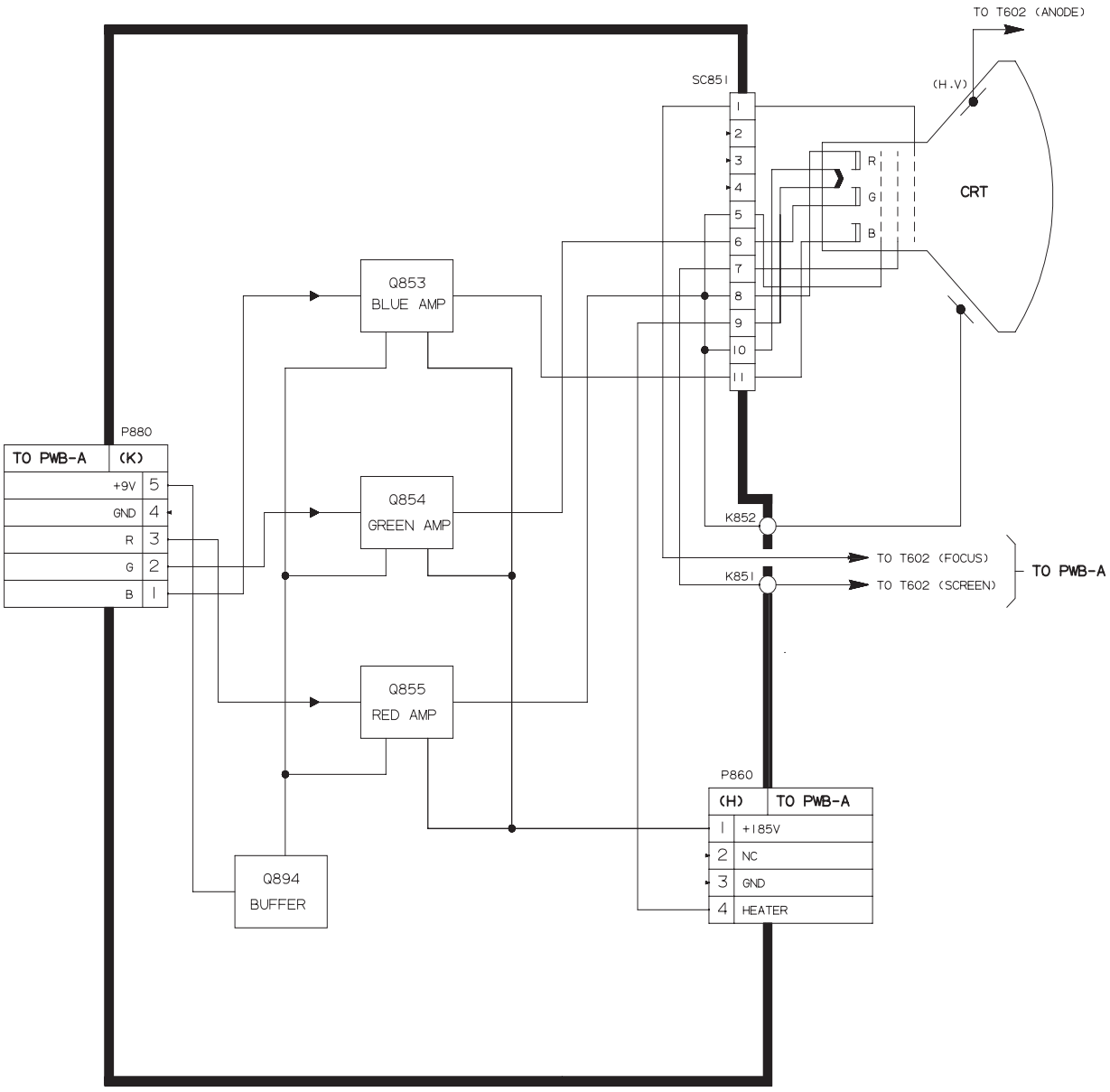


CK DIAGRAM



10	11	12	13	14	15	16	17	18	19

CRT BLOCK DIAGRAM



CHAPTER 9. DESCRIPTION OF SCHEMATIC DIAGRAM

DESCRIPTION OF SCHEMATIC DIAGRAM

NOTES:

1. *The unit of resistance "ohm" is omitted. (K=kΩ=1000Ω, M=MΩ)*
2. *All resistors are 1/16 watt, unless otherwise noted.*
3. *All capacitors are μF, unless otherwise noted. (P=pF=μμF)*
4. *(G) indicates ±2% tolerance may be used.*
5. *⏚ indicates line isolated ground.*

VOLTAGE MEASUREMENT CONDITIONS:

1. *All DC voltages are measured with DVM connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.*
2. *All voltages measured with 1000μ V B & W or Color signal.*

WAVEFORM MEASUREMENT CONDITIONS:

1. *Photographs taken on a standard gated color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.*
2. *indicates waveform check points (See chart, waveforms are measured from point indicated to chassis ground.)*

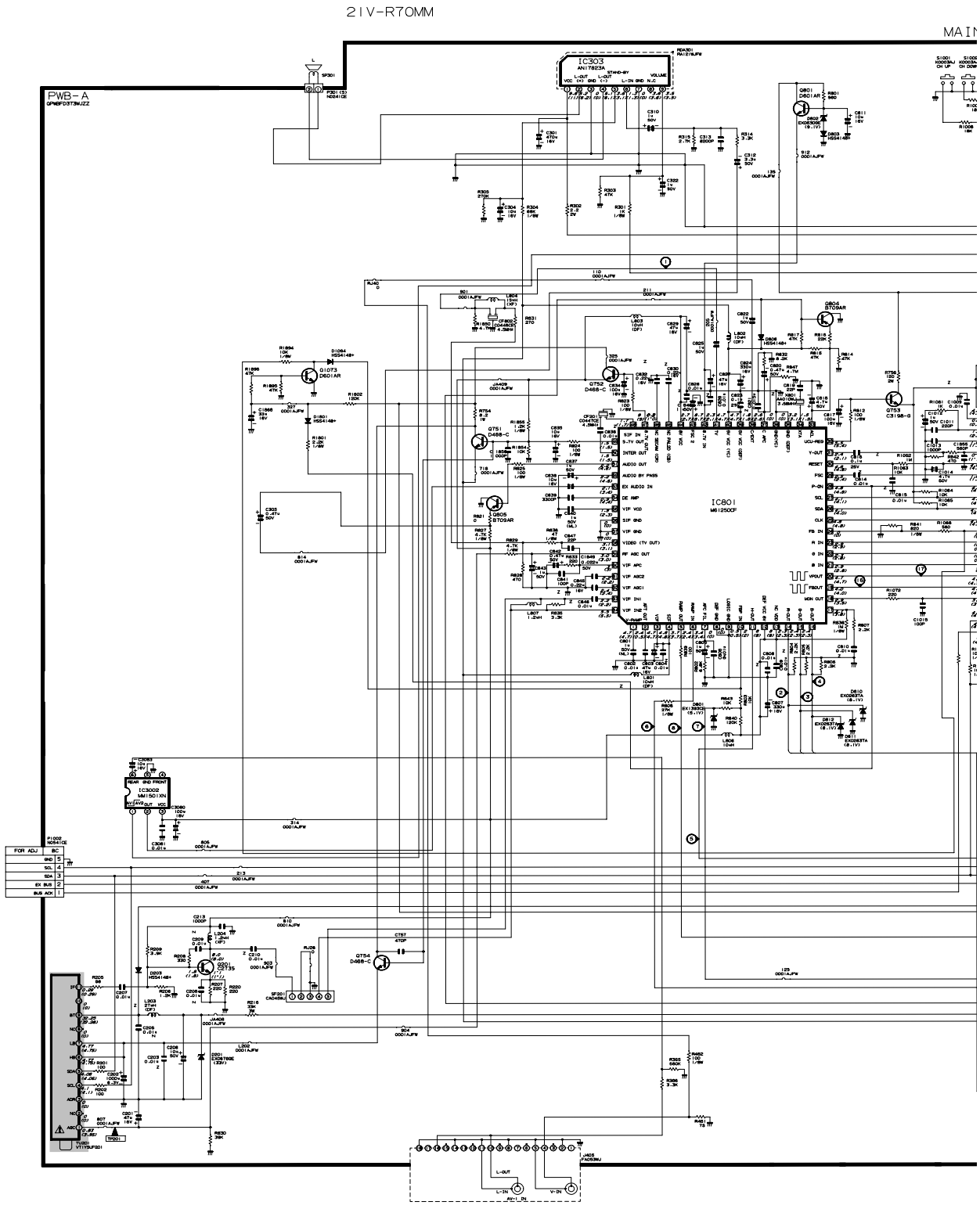
⚠ AND SHADED ( ) COMPONENTS = SAFETY RELATED PARTS.
▲ MARK= X-RAY RELATED PARTS.

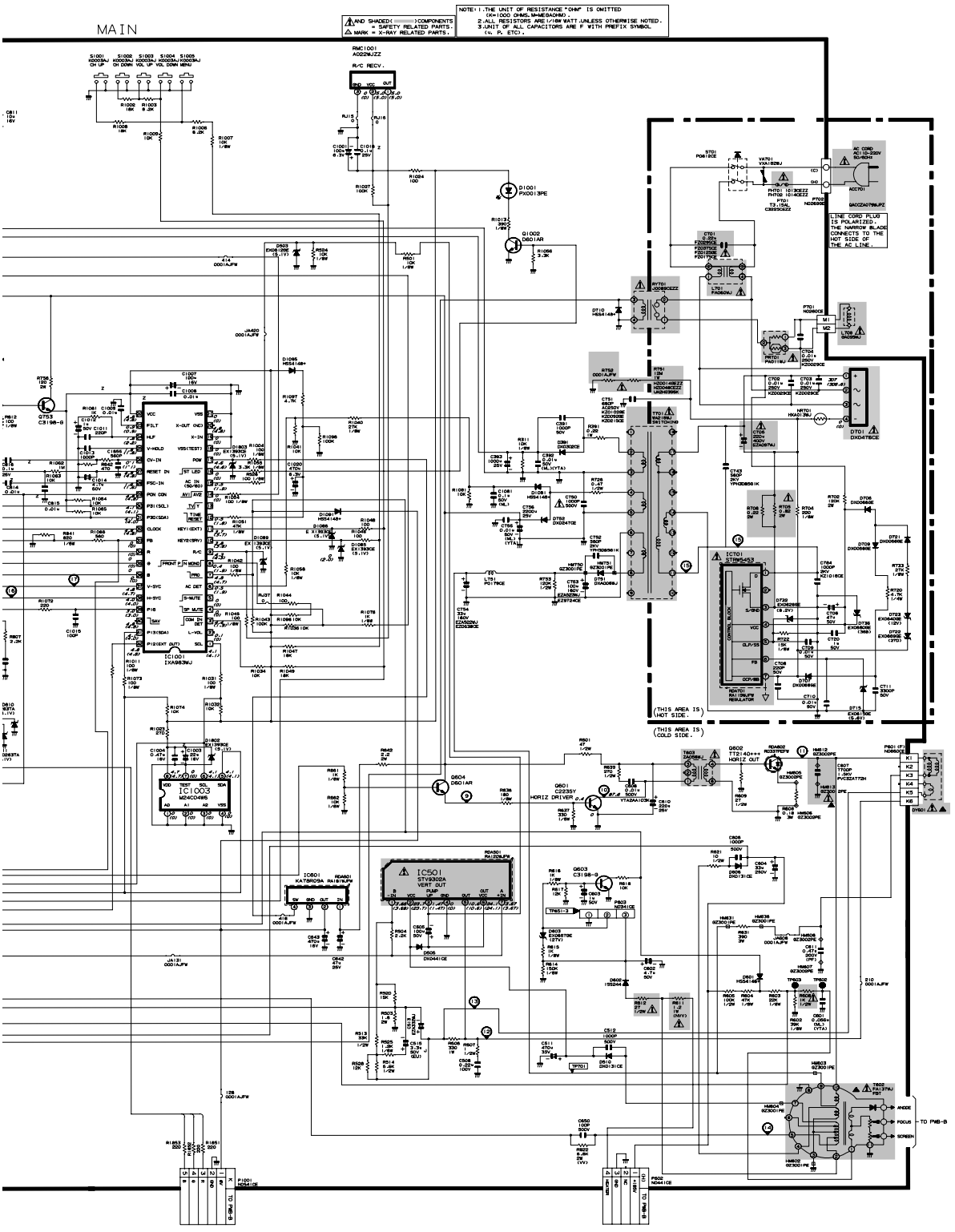
DRGANNES MARQUES ⚠ ET HACHRES ( ): PIECES RELATIVES A LA SECURITE.
MARQUE ▲ : PIECS RELATIVE AUX RAYONS X.

This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.

CHAPTER 10. SCHEMATIC DIAGRAM

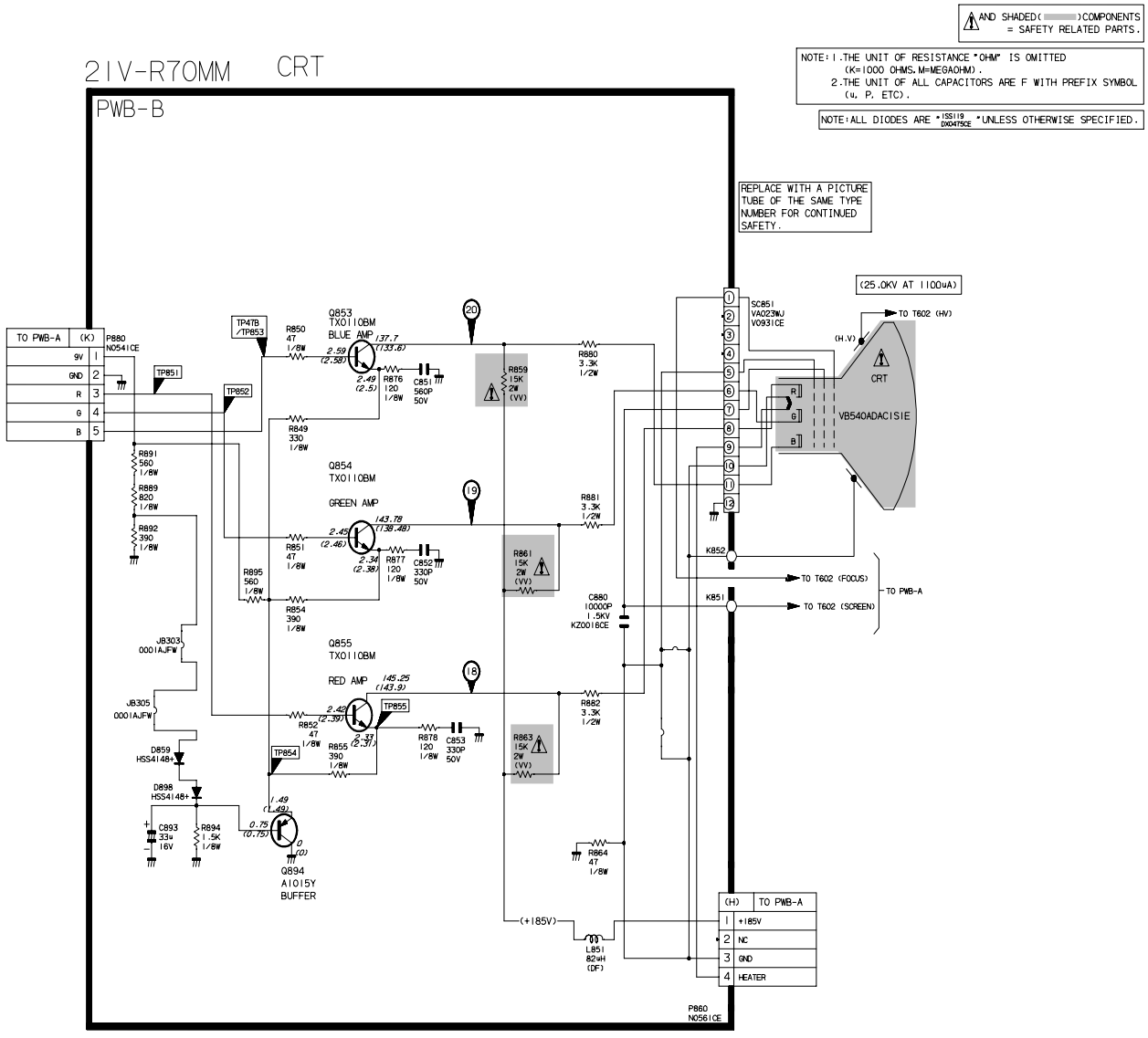
SCHEMATIC DIAGRAM : MAIN UNIT



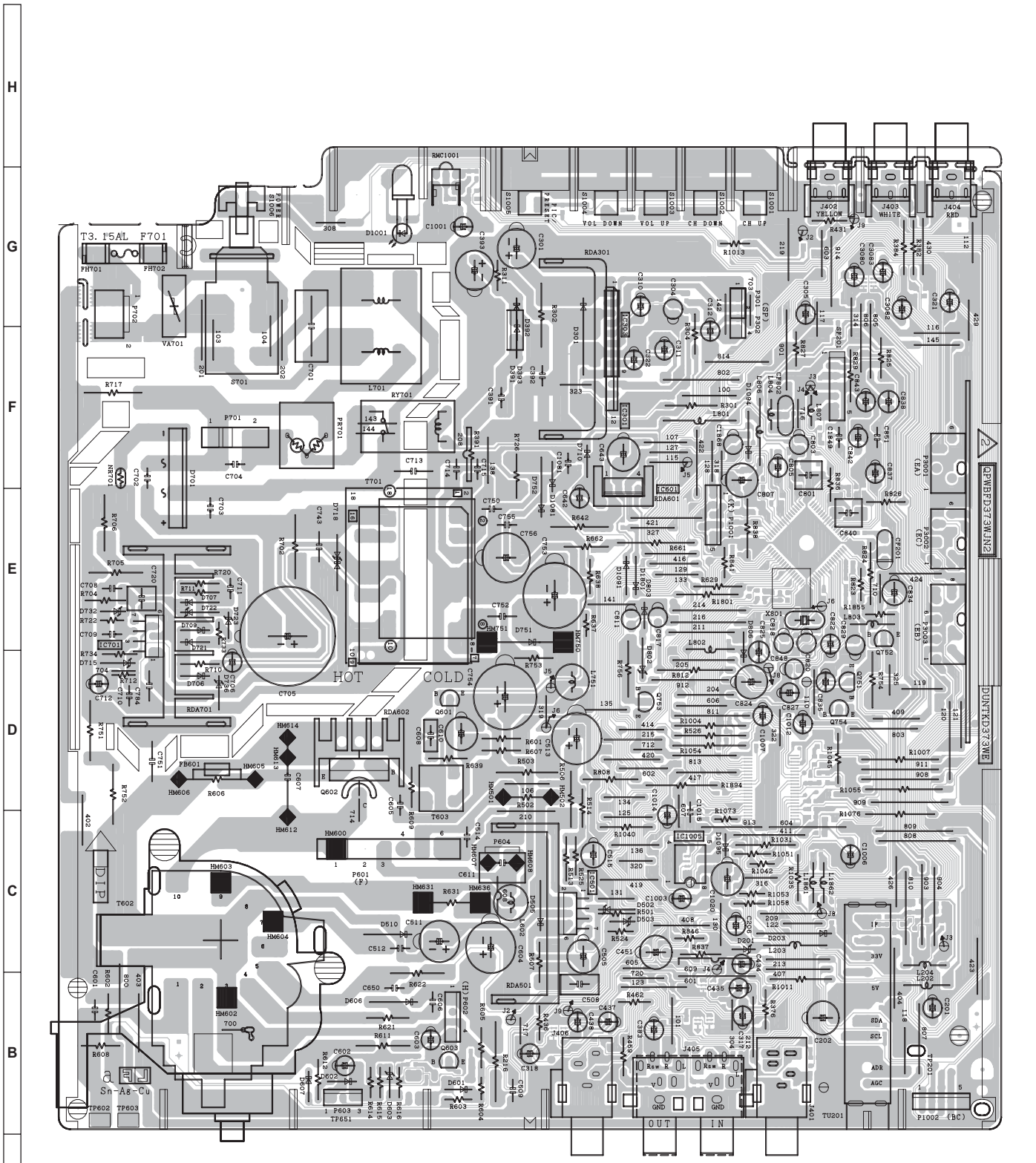

MAIN
NOTE:1.THE UNIT OF RESISTANCE "OHM" IS OMITTED (K=1000 OHMS, M=MEGAOHMS).
2.ALL RESISTORS ARE 1/8W WATT UNLESS OTHERWISE NOTED.
3.UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL (u, P, ETC).
AND SHADED( ) COMPONENTS = SAFETY RELATED PARTS.
MARK = X-RAY RELATED PARTS.
R/C RECV.
LINE CORD PLUG IS POLARIZED. THE NARROW BLADE CONNECTS TO THE HOT SIDE OF THE AC LINE.
(THIS AREA IS HOT SIDE.)
(THIS AREA IS COLD SIDE.)
TO PWB-B
IC501 STV9302A VERT OUT
IC1003 M24C04WS
IC1001 IXA983WJ
HORIZ DRIVER
CONTROL BLOCK
REGULATOR

10	11	12	13	14	15	16	17	18	19

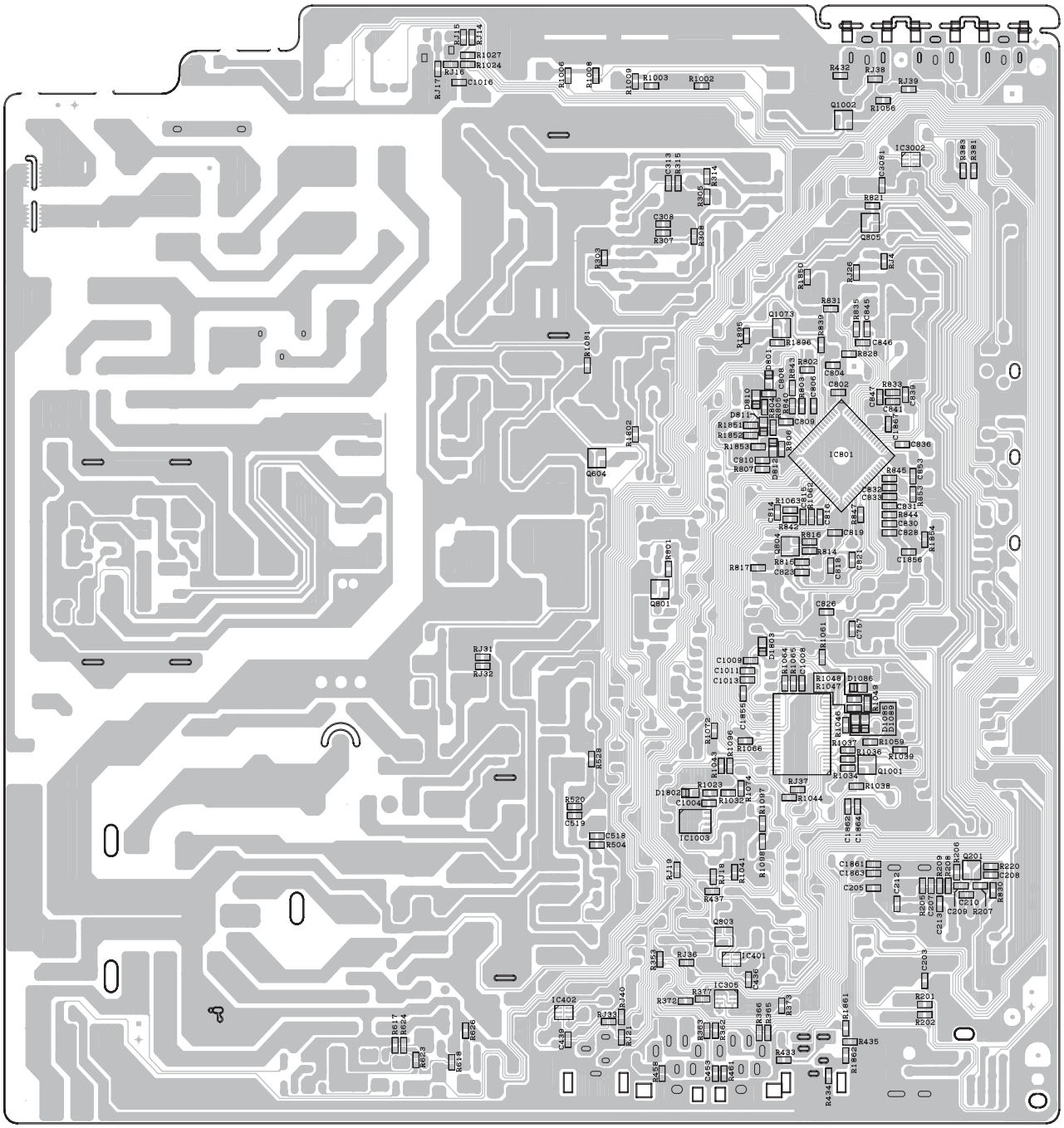
SCHEMATIC DIAGRAM : CRT UNIT



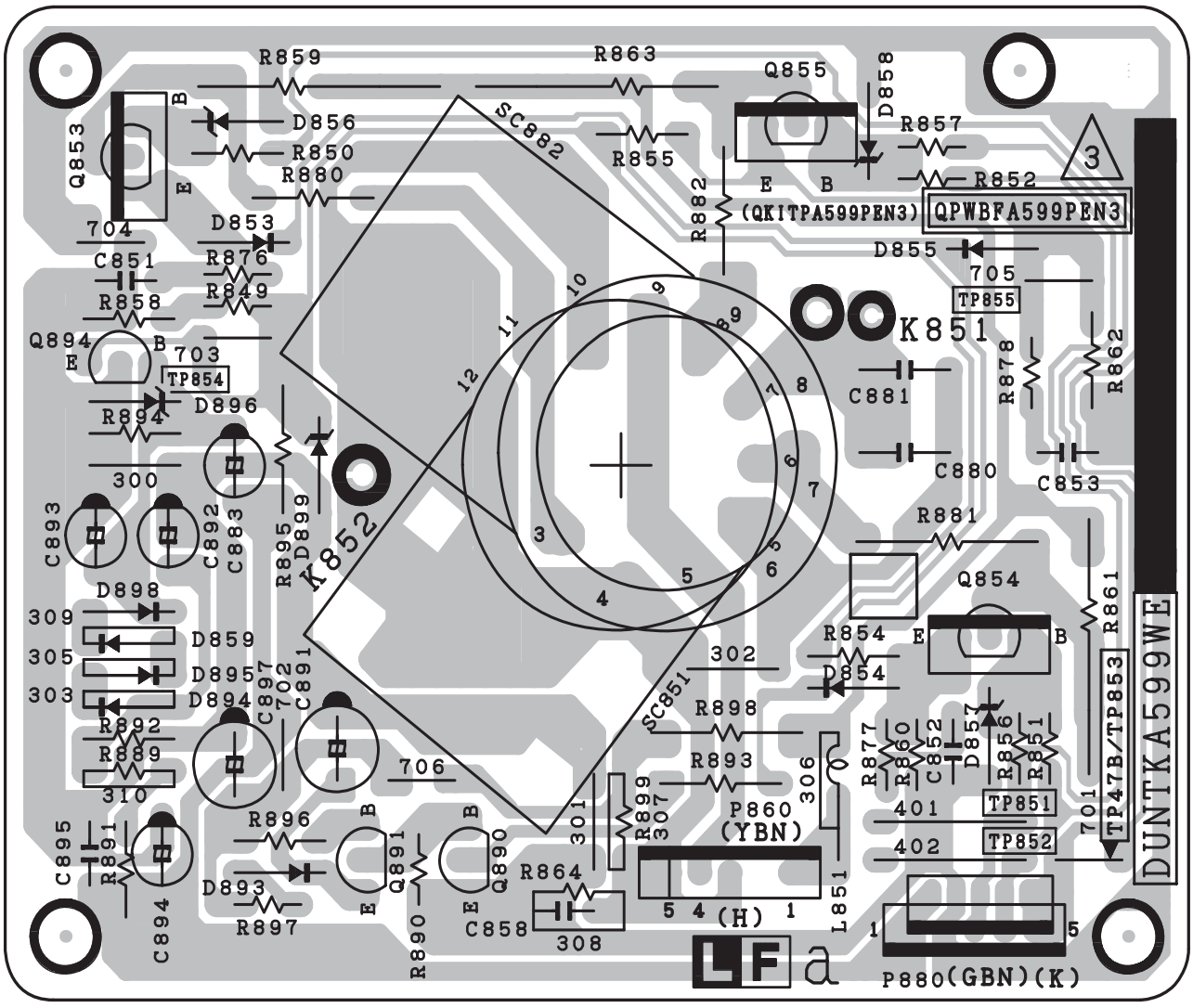
CHAPTER 11. PRINTED WIRING BOARD ASSEMBLIES



PWB-A : MAIN UNIT (Wiring Side)



PWB-A : MAIN UNIT (Chip Parts Side)



PWB-B : CRT UNIT (Wiring Side)

SHARP PARTS GUIDE

NO. S677421VR70MM

MODEL 21V-R70M

CONTENTS

[1] PICTURE TUBE

[2] PRINTED WIRING BOARD ASSEMBLIES

[3] MAIN UNIT

[4] CRT UNIT

[5] MISCELLANEOUS PARTS

[6] SUPPLIED ACCESSORIES

[7] CABINET PARTS

[8] PACKING PARTS

■ INDEX

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
	[1] PICTURE TUBE				
⚠	RCiLGA115WJN1			R	Degaussing Coil
⚠	VB540ADAC1S1E			R	SEMI-ITC CRT
	QEARC2107PEZZ			R	Grounding Strap
	PMAGF3046CEZZ			R	Purity Magnet
	[2] PRINTED WIRING BOARD ASSEMBLIES				
	DUNTKD373WEA5	−		−	MAIN Unit (PWB-A)
	DUNTKA599WE01	−		−	CRT Unit (PWB-B)
	[3] MAIN UNIT				
⚠ TU201	VTUVT1Y5UF201	AT		R	Tuner
IC303	VHiAN17823A-1			R	AN17823A
⚠ IC501	VHiSTV9302A-1	AH		R	Vetical IC , STV9302A
IC601	VHiKA78R09AP1	AC		R	KA78R09AP
⚠ IC701	VHiSTRW5453-1	AM		R	STRW5453
IC801	VHiM61250CF1EQ	AS		R	M61250CF1
IC1003	VHiM24C04W6-1Y			R	M24C04W6-1Y
IC3002	VHiMM1501XN-1Y			R	MM1501XN
Q201	VS2SC2735//1EY	AB		R	2SC2735
Q601	VS2SC2235Y/1E+	AB		R	2SC2235Y
Q602	VSTT2140+++-F	AD		R	TT2140+++
Q603	VS2SC3198-G-1+	AA		R	2SC3198-G
Q604	VS2SC3928AR-1Y	AB		R	2SC3928AR
Q751	VS2SD468-C/-1+	AD		R	2SD468-C
Q752	VS2SD468-C/-1+	AD		R	2SD468-C
Q753	VS2SC3198-G-1+	AA		R	2SC3198-G
Q754	VS2SD468-C/-1+	AD		R	2SD468-C
Q801	VS2SC3928AR-1Y	AB		R	2SC3928AR
Q804	VS2SA1530AR-1Y	AB		R	2SA1530AR
Q805	VS2SA1530AR-1Y	AB		R	2SA1530AR
Q1001	VS2SC3928AR-1Y	AB		R	2SC3928AR
Q1002	VS2SC3928AR-1Y	AB		R	2SC3928AR
Q1073	VS2SC3928AR-1Y	AB		R	2SC3928AR
D201	RH-EX0676GEZZY	AA		R	Zener , EX0676GE
D203	VHDHSS4148+-1Y			R	SS4148+-1
D391	RH-DX0302CEZZ			R	DX0302CE
D503	RH-EX0612GEZZY	AB		R	Zener , EX0612GE
D505	RH-DX0441CEZZY	AB		R	DX0441CE
D510	RH-DX0131CEZZY	AB		R	DX0131CE
D601	VHDHSS4148+-1Y			R	SS4148+-1
D602	VHD1SS244//-1Y	AA		R	1SS119
D603	RH-EX0667GEZZY	AA		R	Zener , EX0667GE
D606	RH-DX0131CEZZY	AB		R	DX0131CE
⚠ D701	RH-DX0476CEZZ	AC		R	DX0476CE
D706	RH-DX0066GEZZY	AB		R	DX0066GE
D707	RH-DX0066GEZZY	AB		R	DX0066GE
D709	RH-DX0066GEZZY	AB		R	DX0066GE
D710	VHDHSS4148+-1Y			R	SS4148+-1
D715	RH-EX0615GEZZY	AA		R	Zener , EX0615GE
D721	RH-DX0066GEZZY	AB		R	DX0066GE
D722	RH-EX0669GEZZY	AA		R	Zener , EX0669GE
D723	RH-EX0640GEZZY	AA		R	Zener , EX0640GE
D732	RH-EX0626GEZZY	AB		R	Zener , EX0626GE
D736	RH-EX0680GEZZY	AA		R	Zener , EX0680GE
D751	RH-DXA044WJZZ	AB		R	DXA044WJ
D752	RH-DX0247CEZZ	AB		R	DX0247CE
D801	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
D802	RH-EX0630GEZZY	AA		R	Zener , EX0630GE
D803	VHDHSS4148+-1Y			R	SS4148+-1
D806	VHDHSS4148+-1Y			R	SS4148+-1
D810	RH-EX0263TAZZY	AB		R	Zener , EX0063TA
D811	RH-EX0263TAZZY	AB		R	Zener , EX0063TA
D812	RH-EX0263TAZZY	AB		R	Zener , EX0063TA
D1001	RH-PX0013PEZZ	AB		R	PhotoDiode
D1081	VHDHSS4148+-1Y			R	SS4148+-1
D1085	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
D1086	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
D1089	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
D1091	VHDHSS4148+-1Y			R	SS4148+-1
D1094	VHDHSS4148+-1Y			R	SS4148+-1
D1095	VHDHSS4148+-1Y			R	SS4148+-1
D1801	VHDHSS4148+-1Y			R	SS4148+-1
D1802	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
D1803	RH-EX1393CEZZY	AB		R	Zener , EX1393CE
VA701	RH-VX0073CEZZ	AB		R	Varistor
⚠ PR701	RMPTPA011WJZZ			R	Packaged Circuit
X801	RCRSAA010WJZZ	AE		R	Crystal
CF201	RFiLC0447CEZZ	AB		R	Filter , FiLC0447CE
CF802	RFiLC0446CEZZ	AB		R	Filter , FiLC0446CE
SF201	RFiLCA045WJPZ	AF		R	Filter , FiLCA045WJ
L202	QJUM-0001AJFWY	AA		R	Jumper
L203	VP-DF270K0000Y	AB		R	Peaking , 27mH
L204	VP-XF1R2K0000Y	AB		R	Peaking , 1.2mH
L701	RCiLFA060WJZZ	AD		R	Coil , CiLFA060WJ

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] MAIN UNIT					
L751	RCiLP0179CEZZ+	AB		R	Coil , CiLP0179CE
L801	VP-DF100K0000Y	AB		R	Peaking , 10mH
L802	VP-DF100K0000Y	AB		R	Peaking , 10mH
L803	VP-DF100K0000Y	AB		R	Peaking , 10mH
L804	VP-XF150K0000Y	AB		R	Peaking , 15mH
L806	VP-DF100K0000Y	AB		R	Peaking , 10mH
L807	VP-XF1R2K0000Y	AB		R	Peaking , 1.2mH
⚠ T602	RTRNFA137WJZZ	AV		R	Transformer
⚠ T603	RTRNZA058WJZZ	AB		R	Transformer
⚠ T701	RTRNWA216WJZZ	AL		R	Transformer
C201	VCEA0A1CW476M+	AB		R	47 16V Electrolytic
C202	VCEA0A0JW108M+	AB		R	1000 6.3V Electrolytic
C203	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C205	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C206	VCEA0A1HW106M+	AB		R	10 50V Electrolytic
C207	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C208	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C209	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C210	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C213	VCKYCY1HB102KY	AA		R	1000p 50V Ceramic
C301	VCEA0A1CW477M+	AB		R	470 16V Electrolytic
C304	VCEA9M1CW106M+	AA		R	10 16V Electrolytic
C305	VCEA0A1HW474M+	AB		R	0.47 50V Electrolytic
C310	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C312	VCEA0A1HW335M+	AB		R	3.3 50V Electrolytic
C313	VCKYCY1HB822KY	AA		R	8200p 50V Ceramic
C322	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C391	VCKYPA1HB102K+	AA		R	1000p 50V Ceramic
C392	VCQYTA1HM103J+	AB		R	0.01 50V Mylar
C393	VCEA0A1EW108M+	AB		R	1000 25V Electrolytic
C505	VCEA0A1HW107M+	AB		R	100 50V Electrolytic
C508	VCFYAA2AA224J+	AC		R	0.22 100V
C511	VCEA0A1VW477M+	AB		R	470 35V Electrolytic
C512	VCKYPA2HB102K+	AB		R	1000p 500V Ceramic
C513	RC-EZA332WJZZ+	AB		R	Capacitor
C515	VCEACA1HC335J+	AB		R	3.3 50V Electrolytic
C601	VCQYTA1HM563J+	AA		R	0.056 50V Mylar
C602	VCEA0A1HW475M+	AB		R	4.7 50V Electrolytic
C603	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C604	VCEA0A2EW336M+	AB		R	33 250V Electrolytic
C606	VCKYPA2HB102K+	AB		R	1000p 500V Ceramic
⚠ C607	VCFPVC3ZA772H	AD		R	7700p 1800V Metalized Polypro Film
C608	VCFYF1HA563J+	AB		R	0.53 50V Mylar
C610	VCEA0A1EW227M+	AB		R	220 25V Electrolytic
C611	VCFPVC2EC474J	AB		R	0.47 250V Metalized Polypro Film
C642	VCEA0A1EW476M+	AB		R	47 25V Electrolytic
C643	VCEA0A1CW477M+	AB		R	470 16V Electrolytic
C650	VCKYPA2HB101K+	AB		R	100p 500V Ceramic
⚠ C701	RC-FZ029SCEZZ	AB		R	Capacitor
C702	RC-KZ0029CEZZ+	AB		R	Capacitor
C703	RC-KZ0029CEZZ+	AB		R	Capacitor
C704	RC-KZ0029CEZZ	AC		R	0.01 250V Ceramic
⚠ C705	RC-EZA533WJZZ	AD		R	100 160V Electrolytic
C706	VCEA0A1HW476M+	AB		R	47 50V Electrolytic
C708	VCKYPA1HB221K+	AA		R	220p 50V Ceramic
C709	VCKYPA1HB103K+	AA		R	0.01 50V Ceramic
C710	VCQYTA1HM222J+	AA		R	2200p 50V Mylar
C711	VCKYPA1HB222K+	AB		R	2200p 50V Ceramic
C720	VCFYFA1HA105J+	AE		R	1 50V Mylar
C750	VCKYPA2HB102K+	AB		R	1000p 500V Ceramic
C751	RC-KZ0102GEZZ	AB		R	250V Ceramic
C752	VCKYPH3DB561K	AB		R	560p 2000V Ceramic
C753	RC-EZA523WJZZ	AD		R	100 160V Electrolytic
C754	RC-EZA522WJZZ	AD		R	33 160V Electrolytic
C755	VCQYTA1HM103J+	AB		R	0.01 50V Mylar
C756	VCEA0A1EW228M+	AE		R	2200 25V Electrolytic
C757	VCKYCY1HB471KY	AA		R	470p 50V Ceramic
C784	VCKYPH3DB561K	AB		R	560p 2000V Ceramic
C801	VCFYFA1HA105J+	AE		R	1 50V Mylar
C802	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C803	VCEA9M1CW476M+	AA		R	47 16V Electrolytic
C804	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C805	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C806	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C807	VCEA0A1CW337M+	AB		R	330 16V Electrolytic
C808	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C809	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C810	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C811	VCEA9M1CW106M+	AA		R	10 16V Electrolytic
C814	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C815	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C816	VCKYCY1EF104ZY	AA		R	0.1 25V Ceramic
C817	VCEA9M1CW107M+	AB		R	100 16V Electrolytic
C818	VCEA9M1HW475M+	AB		R	4.7 50V Electrolytic

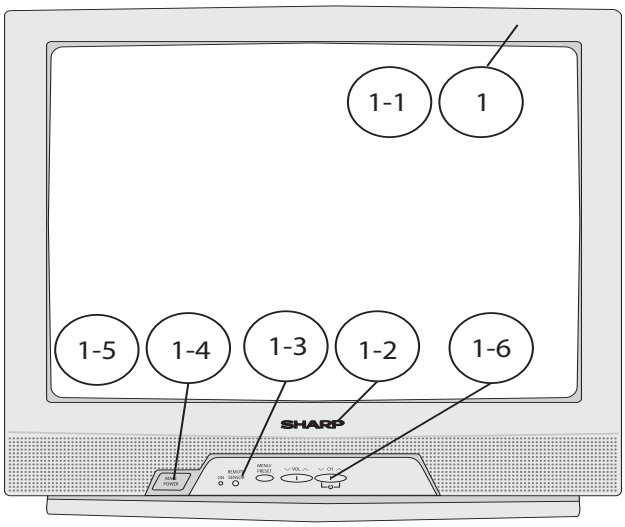
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] MAIN UNIT					
C819	VCCCCY1HH220JY	AA		R	22p 50V Ceramic
C820	VCEA9M1HW474M+	AA		R	0.47 50V Electrolytic
C821	VCKYCY1HF153ZY	AA		R	0.015 50V Ceramic
C822	VCE9GA1HW105M+	AB		R	1 50V Electrolytic
C823	VCKYCY1EF104ZY	AA		R	0.1 25V Ceramic
C824	VCEA0A1CW337M+	AB		R	330 16V Electrolytic
C825	VCE9GA1HW105M+	AB		R	1 50V Electrolytic
C826	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C827	VCEA0A1CW476M+	AB		R	47 16V Electrolytic
C828	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C829	VCEA9M1CW476M+	AA		R	47 16V Electrolytic
C830	VCKYCY1CF224ZY	AA		R	0.22p 16V Ceramic
C832	VCKYCY1CF224ZY	AA		R	0.22p 16V Ceramic
C834	VCEA0A1CW107M+	AB		R	100 16V Electrolytic
C835	VCEA0A1CW106M+	AA		R	10 16V Electrolytic
C836	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C837	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C838	VCEA0A1CW106M+	AA		R	10 16V Electrolytic
C839	VCKYCY1HB332KY	AA		R	3300p 50V Ceramic
C840	VCFYFA1HA105J+	AE		R	1 50V Mylar
C841	VCCCCY1HH101JY	AA		R	100p 50V Ceramic
C842	VCEA0A1HW474M+	AA		R	0.47 50V Electrolytic
C843	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C845	VCKYCY1CF224ZY	AA		R	0.22p 16V Ceramic
C846	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C847	VCCCCY1HH220JY	AA		R	22p 50V Ceramic
C848	VCEA9M1HW105M+	AA		R	1 50V Electrolytic
C1001	VCEA0A0JW107M+	AA		R	100 10V Electrolytic
C1003	VCEA0A1CW226M+	AB		R	22 16V Electrolytic
C1004	VCKYCY1CF474ZY	AB		R	0.47p 16V Ceramic
C1007	VCEA0A1CW107M+	AB		R	100 16V Electrolytic
C1008	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C1009	VCKYCY1HF103ZY	AA		R	0.01 50V Ceramic
C1011	VCKYCY1HB221KY	AA		R	220p 50V Ceramic
C1012	VCEA0A1HW105M+	AB		R	1 50V Electrolytic
C1013	VCKYCY1HB102KY	AA		R	1000p 50V Ceramic
C1014	VCE9GA1HW475M+	AB		R	4.7 50V Electrolytic
C1015	VCCCPA1HH101J+	AA		R	100p 50V Ceramic
C1016	VCKYCY1EF104ZY	AA		R	0.1 25V Ceramic
C1020	VCEA0A0JW477M+	AB		R	470 6.3V Electrolytic
C1081	VCQYTA1HM104J+	AB		R	0.1 50V Mylar
C1849	VCFYFA1HA223J+	AA		R	0.022 50V Mylar
C1855	VCKYCY1HB561KY	AA		R	560p 50V Ceramic
C1856	VCKYCY1HB102KY	AA		R	1000p 50V Ceramic
C1868	VCEA9M1CW336M+	AB		R	33 16V Electrolytic
C3080	VCEA0A1CW107M+	AB		R	100 16V Electrolytic
C3081	VCKYCY1HB103KY	AA		R	0.01p 50V Ceramic
C3083	VCEA0A1CW106M+	AA		R	10 16V Electrolytic
RJ15	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ16	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ18	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ19	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ26	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ37	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
RJ40	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R201	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R202	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R205	VRS-CY1JF680JY	AA		R	68 1/16W Metal Oxide
R206	VRS-CY1JF122JY	AA		R	1.2K 1/16W Metal Oxide
R207	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R208	VRS-CY1JF331JY	AA		R	330 1/16W Metal Oxide
R209	VRS-CY1JF392JY	AA		R	3.9K 1/16W Metal Oxide
R216	VRS-VV3LB333J+	AC		R	33K 3.0W Metal Oxide
R220	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R301	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R302	VRN-RL3DB2R2J+	AB		R	2.2 2W Metal Film
R303	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R304	VRD-RA2BE683JY	AA		R	68K 1/8W Carbon
R305	VRS-CY1JF274JY	AA		R	270K 1/16W Metal Oxide
R311	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R314	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R315	VRS-CY1JF272JY	AA		R	2.7K 1/16W Metal Oxide
R365	VRS-CY1JF564JY	AA		R	560K 1/16W Metal Oxide
R366	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R391	VRN-VV3ABR22J	AB		R	0.22 1W Metal Oxide
R461	VRS-CY1JF750JY	AA		R	75 1/16W Metal Oxide
R462	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R501	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R503	VRN-VV3DB1R5J+	AB		R	1.5 2W Metal Film
R504	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R506	VRS-VV3AB331J+	AB		R	300 1W Metal Oxide
R507	VRD-RM2HD1R0JY	AA		R	1 1/2W Carbon
R513	VRD-RM2HD333JY	AA		R	33K 1/2W Carbon
R514	VRD-RM2HD562JY	AA		R	5.6K 1/2W Carbon
R520	VRS-CY1JF133JY	AA		R	13K 1/16W Metal Oxide

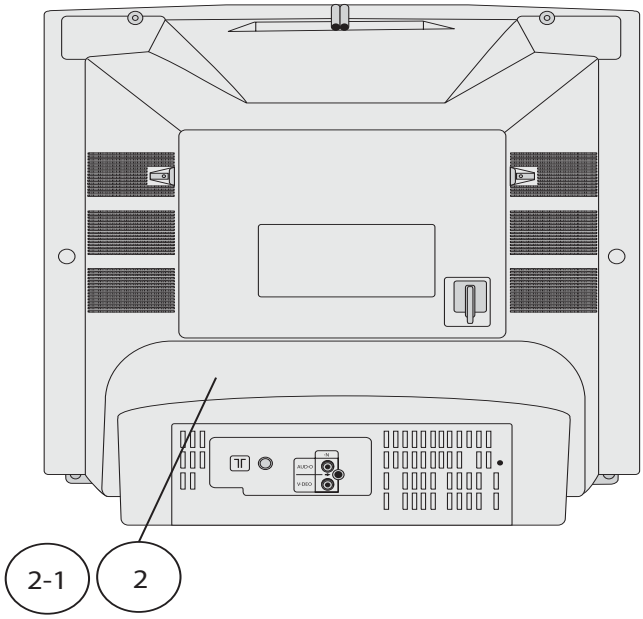
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] MAIN UNIT					
R524	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R525	VRD-RA2BE122JY	AA		R	1.2K 1/8W Carbon
R526	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R601	VRD-RM2HD680JY	AA		R	68 1/2W Carbon
R602	VRD-RA2BE393JY	AA		R	39K 1/8W Carbon
R603	VRD-RA2BE223JY	AA		R	22K 1/8W Carbon
R604	VRD-RA2BE473JY	AA		R	47K 1/8W Carbon
R605	VRD-RM2HD104JY	AA		R	100K 1/2W Carbon
R606	VRN-RL3LBR18J+	AD		R	0.18 3.0W Metal Oxide
R607	VRD-RM2HD680JY	AA		R	68 1/2W Carbon
⚠ R608	VRD-RM2HD102JY	AA		R	1K 1/2W Carbon
R609	VRD-RM2HD270JY	AA		R	27 1/2W Carbon
⚠ R611	VRN-RL3AB1R2J+	AB		R	1.2 1W Metal Film
⚠ R612	VRD-RM2HD270JY	AA		R	27 1/2W Carbon
R614	VRD-RA2BE154JY	AA		R	150K 1/8W Carbon
R615	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R616	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R617	VRS-CY1JF123JY	AA		R	12K 1/16W Metal Oxide
R618	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R621	VRN-RL2HC100J	AB		R	10 1/2W Metal Film
R622	VRS-VV3DB682J+	AA		R	6.8K 2W Metal Oxide
R631	VRS-KT3LB391J	AB		R	390 3W Metal Oxide
R637	VRD-RA2BE331JY	AA		R	330 1/8W Carbon
R638	VRD-RA2BE181JY	AA		R	180 1/8W Carbon
R639	VRD-RM2HD151JY	AA		R	150 1/2W Carbon
R642	VRN-VV3DB1R0J+	AB		R	1 2W Metal Film
R661	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R662	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R702	VRS-VV3DB124J	AB		R	120K 2W Metal Oxide
R704	VRD-RA2BE221JY	AA		R	220 1/8W Carbon
⚠ R705	VRN-VV3DBR82J+	AB		R	0.82 2W Metal Film
⚠ R706	VRN-VV3DBR22J+	AB		R	0.22 2W Metal Film
R710	VRD-RM2HD1R0JY	AA		R	1 1/2W Carbon
R720	VRD-RA2EE472JY	AA		R	4.7K 1/4W Carbon
R722	VRD-RA2BE153JY	AA		R	15K 1/8W Carbon
R726	VRN-SV2HCR47J+	AB		R	0.47 1/2W Metal Film
R733	VRD-RA2BE273JY	AA		R	27K 1/8W Carbon
⚠ R751	RR-DZ0049CEZZY	AB		R	Resistor
⚠ R752	RR-DZ0049CEZZY	AB		R	Resistor
R753	VRD-RM2HD124JY	AA		R	120K 1/2W Carbon
R754	VRN-VV3AB8R2J+	AB		R	8.2 1W Metal Film
R756	VRS-VV3DB121J+	AB		R	120 2W Metal Oxide
R801	VRS-CY1JF561JY	AA		R	560 1/16W Metal Oxide
R802	VRS-CY1JF682JY	AA		R	6.8K 1/16W Metal Oxide
R803	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R804	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R805	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R806	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R807	VRS-CY1JF222JY	AA		R	2.2K 1/16W Metal Oxide
R808	VRD-RA2BE273JY	AA		R	27K 1/8W Carbon
R812	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R814	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R815	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R816	VRS-CY1JF223JY	AA		R	22K 1/16W Metal Oxide
R817	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R821	VRS-CY1JF000JY	AA		R	0 1/16W Metal Oxide
R823	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R824	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R825	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R827	VRD-RA2BE472JY	AA		R	4.7K 1/8W Carbon
R828	VRS-CY1JF471JY	AA		R	470 1/16W Metal Oxide
R829	VRD-RA2BE472JY	AA		R	4.7K 1/8W Carbon
R830	VRS-CY1JF393JY	AA		R	39K 1/16W Metal Oxide
R831	VRS-CY1JF271JY	AA		R	270 1/16W Metal Oxide
R832	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R833	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R835	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R836	VRD-RA2BE470JY	AA		R	47 1/8W Carbon
R838	VRD-RA2BE105JY	AA		R	1M 1/8W Carbon
R839	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R840	VRS-CY1JF124JY	AA		R	120K 1/16W Metal Oxide
R841	VRD-RA2BE821JY	AA		R	820 1/8W Carbon
R842	VRS-CY1JF471JY	AA		R	470 1/16W Metal Oxide
R843	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R847	VRS-CY1JF475JY	AA		R	4.7M 1/16W Metal Oxide
R1002	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1003	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R1004	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1006	VRS-CY1JF822JY	AA		R	8.2K 1/16W Metal Oxide
R1007	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R1008	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1009	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1011	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1013	VRD-RA2BE391JY	AA		R	390 1/8W Carbon

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] MAIN UNIT					
R1023	VRS-CY1JF271JY	AA		R	270 1/16W Metal Oxide
R1024	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1027	VRS-CY1JF104JY	AA		R	100K 1/16W Metal Oxide
R1031	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1032	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1034	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1036	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1040	VRD-RA2BE273JY	AA		R	27K 1/8W Carbon
R1041	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1042	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1043	VRS-CY1JF104JY	AA		R	100K 1/16W Metal Oxide
R1044	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1045	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1046	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1047	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1048	VRS-CY1JF101JY	AA		R	100 1/16W Metal Oxide
R1049	VRS-CY1JF183JY	AA		R	18K 1/16W Metal Oxide
R1051	VRD-RA2BE473JY	AA		R	47K 1/8W Carbon
R1054	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1055	VRD-RA2BE332JY	AA		R	3.3K 1/8W Carbon
R1056	VRS-CY1JF332JY	AA		R	3.3K 1/16W Metal Oxide
R1058	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R1061	VRS-CY1JF102JY	AA		R	1K 1/16W Metal Oxide
R1062	VRS-CY1JF105JY	AA		R	1M 1/16W Metal Oxide
R1063	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1064	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1065	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1066	VRS-CY1JF561JY	AA		R	560 1/16W Metal Oxide
R1072	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R1073	VRD-RA2BE101JY	AA		R	100 1/8W Carbon
R1074	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1076	VRD-RA2BE102JY	AA		R	1K 1/8W Carbon
R1081	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1096	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1097	VRS-CY1JF472JY	AA		R	4.7K 1/16W Metal Oxide
R1098	VRS-CY1JF104JY	AA		R	100K 1/16W Metal Oxide
R1801	VRD-RA2BE222JY	AA		R	2.2K 1/8W Carbon
R1802	VRS-CY1JF124JY	AA		R	120K 1/16W Metal Oxide
R1850	VRS-CY1JF472JY	AA		R	4.7K 1/16W Metal Oxide
R1851	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R1852	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R1853	VRS-CY1JF221JY	AA		R	220 1/16W Metal Oxide
R1854	VRS-CY1JF103JY	AA		R	10K 1/16W Metal Oxide
R1855	VRD-RA2BE122JY	AA		R	1.2K 1/8W Carbon
R1894	VRD-RA2BE103JY	AA		R	10K 1/8W Carbon
R1895	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
R1896	VRS-CY1JF473JY	AA		R	47K 1/16W Metal Oxide
S701	QSW-P0612CEZZ			R	Power Switch
S1001	QSW-K0003AJZZ+	AB		R	Switch , CH-UP
S1002	QSW-K0003AJZZ+	AB		R	Switch , CH-DOWN
S1003	QSW-K0003AJZZ+	AB		R	Switch , VOL-UP
S1004	QSW-K0003AJZZ+	AB		R	Switch , VOL-DOWN
S1005	QSW-K0003AJZZ+	AB		R	Switch , MENU
⚠ F701	QFS-C3225CEZZ	AC		R	Fuse , 3.15A 250V
⚠ FH701	QFSHD1013CEZZ+	AC		R	Fuse Holder
⚠ FH702	QFSHD1014CEZZ+	AC		R	Fuse Holder
J405	QJAKFA053WJQZ			R	Jack
P301	QPLGN0241CEZZ	AB		R	Plug , 4Pin (S)
P601	QPLGN0660CEZZ	AB		R	Plug , 6Pin (K)
P602	QPLGN0441CEZZ	AB		R	Plug , 4Pin
P603	QPLGN0341CEZZ	AA		R	Plug , 3Pin
P701	QPLGN0260CEZZ	AB		R	Plug , 2Pin (M)
P702	QPLGN0269GEZZ	AB		R	Plug , 2Pin
P1001	QPLGN0541CEZZ	AB		R	Plug , 5Pin
P1002	QPLGN0541CEZZ	AB		R	Plug , 5Pin (BC)
RDA303	PRDARA172WJFW	AB		R	Heat Sink , IC303
RDA501	PRDARA120WJFW	AB		R	Heat Sink , IC501
RDA601	PRDARA181WJFW	AC		R	Heat Sink , IC601
RDA602	PRDARA361WJFW	AF		R	Heat Sink , Q602
RDA701	PRDARA119WJFW	AC		R	Heat Sink , IC701
RMC1001	RRMCUA022WJZZ	AG		R	Remote Receiver
⚠ RY701	RRLYJ0089CEZZ	AG		R	Relay
[4] CRT UNIT					
Q853	VSBF422++++-2+			R	BF422++
Q854	VSBF422++++-2+			R	BF422++
Q855	VSBF422++++-2+			R	BF422++
Q894	VS2SA1015Y/1E+	AB		R	2SA1015Y
D859	VHDHSS4148+-1Y			R	SS4148+-1
D898	VHDHSS4148+-1Y			R	SS4148+-1
L851	VP-MK820K0000+	AB		R	Peaking , 82mH
C851	VCKYPA1HB561K+	AB		R	560p 50V Ceramic
C852	VCKYPA1HB331K+	AB		R	330p 50V Ceramic
C853	VCKYPA1HB221K+	AB		R	220p 50V Ceramic

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] CRT UNIT					
C880	RC-KZ0153CEZZ	AB		R	1000p 3kV Ceramic
C893	VCEA0A1CW336M+	AA		R	33 16V Electrolytic
R849	VRD-RA2BE271JY	AA		R	270 1/8W Carbon
R850	VRD-RA2BE470JY	AA		R	47 1/8W Carbon
R851	VRD-RA2BE470JY	AA		R	47 1/8W Carbon
R852	VRD-RA2BE470JY	AA		R	47 1/8W Carbon
R854	VRD-RA2BE331JY	AA		R	330 1/8W Carbon
R855	VRD-RA2BE331JY	AA		R	330 1/8W Carbon
⚠ R859	VRS-VV3DB153J	AA		R	15K 2W Metal Oxide
⚠ R861	VRS-VV3DB153J	AA		R	15K 2W Metal Oxide
⚠ R863	VRS-VV3DB153J	AA		R	15K 2W Metal Oxide
R864	VRD-RA2BE470JY	AA		R	47 1/8W Carbon
R876	VRD-RA2BE121JY	AA		R	120 1/8W Carbon
R877	VRD-RA2BE121JY	AA		R	120 1/8W Carbon
R878	VRD-RA2BE121JY	AA		R	120 1/8W Carbon
R880	VRD-RM2HD332JY	AA		R	3.3K 1/2W Carbon
R881	VRD-RM2HD332JY	AA		R	3.3K 1/2W Carbon
R882	VRD-RM2HD332JY	AA		R	3.3K 1/2W Carbon
R889	VRD-RA2BE821JY	AA		R	820 1/8W Carbon
R891	VRD-RA2BE561JY	AA		R	560 1/8W Carbon
R892	VRD-RA2BE391JY	AA		R	390 1/8W Carbon
R894	VRD-RA2BE152JY	AA		R	1.5K 1/8W Carbon
R895	VRD-RA2BE561JY	AA		R	560 1/8W Carbon
P860	QPLGN0441CEZZ	AA		R	Plug , 4Pin
P880	QPLGN0541CEZZ	AA		R	Plug , 5Pin
SC851	QSOCVA023WJZZ	AF		R	Socket , 12 Pin
[5] MISCELLANEOUS PARTS					
⚠ ACC701	QACCZA079WJPZ			R	AC Cord
SP301	VSP9050PA02WA			R	Speaker
	QCNW-A872WJZZ	AC		R	K-Wire
	QCNW-A871WJZZ	AB		R	H-Wire
	QCNW-2206PEZZ			R	SP Wire
[6] SUPPLIED ACCESSORIES					
	RRMCGA257WJSB	AN		R	Infrared Remote Control Unit
	TINS-D307WJZZ			R	Operation Manual (English)
	TINS-D322WJZZ			R	Operation Manual (Spanish)
	QPLGF0126CEZZ			R	Plug
	QANTRA002WJZZ			R	Antena
	UBATU0247AJZZ			R	Battery

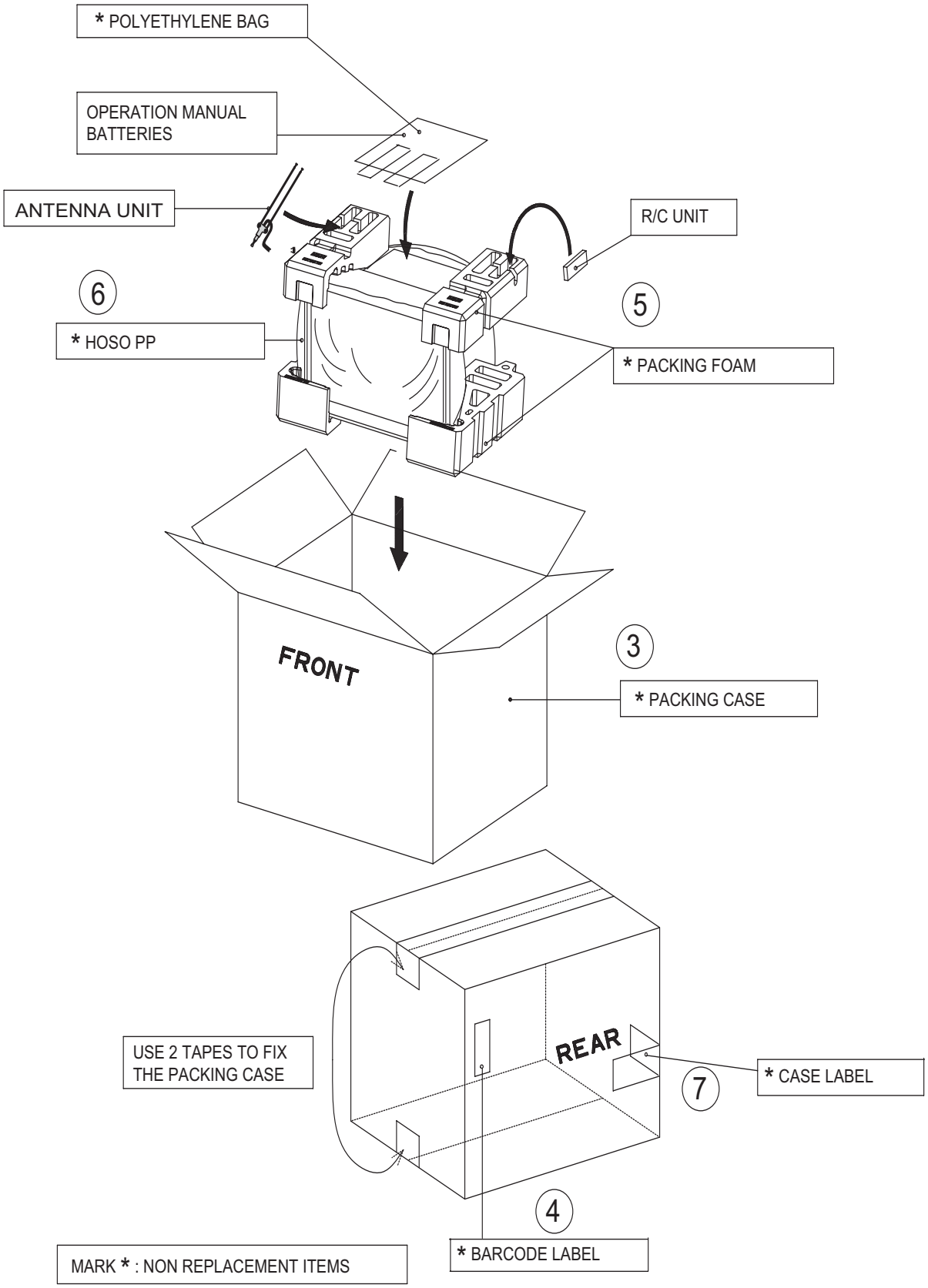
[7] CABINET PARTS





NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVELY	DESCRIPTION
[7] CABINET PARTS					
1	CCABAB162WEV0	–		R	Front Cabinet Ass'y
1-1	Not Available	–		–	Front Cabinet
1-2	HBDGB0206PJSA	AF		R	Sharp Badge
1-3	HDECQ0316PJOT	–		R	R/C Cover
1-4	JBTNP0120PJSA	–		R	Power Button
1-5	MSPRC0005PEFW	–		R	Power Button Spring
1-6	JBTNC0106PJSB	–		R	CTRL Button
	JBTNC0109PJSA	–		R	CTRL Button
2	CCABBA681WEV0	–		R	Rear Cabinet Ass'y
2-1	Not Available	–		–	Rear Cabinet

[8] PACKING PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVELY	DESCRIPTION
[8] PACKING PARTS					
3	SPAKCD666WJZZ	–		–	Packing Case
4	TLABKA008WJZZ	–		–	Bar Code Label
5	SPAKXB620WJZZ	–		–	Packing Foam
6	SPAKPA771WJZZ	–		–	HOSO PP
7	TLABZB837WJZZ	–		–	Case Label

■INDEX

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
【 C 】				
CCABAB162WEV0	7-1	-		R
CCABBA681WEV0	7-2	-		R
【 D 】				
DUNTKA599WE01	2-	-		-
DUNTKD373WEA5	2-	-		-
【 H 】				
HBDGB0206PJSA	7-1-2	AF		R
HDECQ0316PJOT	7-1-3	-		R
【 J 】				
JBTNC0106PJSB	7-1-6	-		R
JBTNC0109PJSA	7-	-		R
JBTNP0120PJSA	7-1-4	-		R
【 M 】				
MSPRC0005PEFW	7-1-5	-		R
【 N 】				
Not Available	7-1-1	-		-
〃	7-2-1	-		-
【 P 】				
PMAGF3046CEZZ	1-			R
PRDARA119WJFW	3-RDA701	AC		R
PRDARA120WJFW	3-RDA501	AB		R
PRDARA172WJFW	3-RDA303	AB		R
PRDARA181WJFW	3-RDA601	AC		R
PRDARA361WJFW	3-RDA602	AF		R
【 Q 】				
QACCZA079WJPZ	5-ACC701			R
QANTRA002WJZZ	6-			R
QCNW-2206PEZZ	5-			R
QCNW-A871WJZZ	5-	AB		R
QCNW-A872WJZZ	5-	AC		R
QEARC2107PEZZ	1-			R
QFS-C3225CEZZ	3-F701	AC		R
QFSHD1013CEZZ+	3-FH701	AC		R
QFSHD1014CEZZ+	3-FH702	AC		R
QJAKFA053WJQZ	3-J405			R
QJUM-0001AJFWY	3-L202	AA		R
QPLGF0126CEZZ	6-			R
QPLGN0241CEZZ	3-P301	AB		R
QPLGN0260CEZZ	3-P701	AB		R
QPLGN0269GEZZ	3-P702	AB		R
QPLGN0341CEZZ	3-P603	AA		R
QPLGN0441CEZZ	3-P602	AB		R
〃	4-P860	AA		R
QPLGN0541CEZZ	3-P1001	AB		R
〃	3-P1002	AB		R
〃	4-P880	AA		R
QPLGN0660CEZZ	3-P601	AB		R
QSOCVA023WJZZ	4-SC851	AF		R
QSW-K0003AJZZ+	3-S1001	AB		R
〃	3-S1002	AB		R
〃	3-S1003	AB		R
〃	3-S1004	AB		R
〃	3-S1005	AB		R
QSW-P0612CEZZ	3-S701			R
【 R 】				
RC-EZA332WJZZ+	3-C513	AB		R
RC-EZA522WJZZ	3-C754	AD		R
RC-EZA523WJZZ	3-C753	AD		R
RC-EZA533WJZZ	3-C705	AD		R
RC-FZ029SCEZZ	3-C701	AB		R
RCiLFA060WJZZ	3-L701	AD		R
RCiLGA115WJN1	1-			R
RCiLP0179CEZZ+	3-L751	AB		R
RC-KZ0029CEZZ	3-C704	AC		R
RC-KZ0029CEZZ+	3-C702	AB		R
〃	3-C703	AB		R
RC-KZ0102GEZZ	3-C751	AB		R
RC-KZ0153CEZZ	4-C880	AB		R
RCRSAA010WJZZ	3-X801	AE		R
RFiLC0446CEZZ	3-CF802	AB		R
RFiLC0447CEZZ	3-CF201	AB		R
RFiLCA045WJPZ	3-SF201	AF		R
RH-DX0066GEZZY	3-D706	AB		R
〃	3-D707	AB		R
〃	3-D709	AB		R
〃	3-D721	AB		R
RH-DX0131CEZZY	3-D510	AB		R
〃	3-D606	AB		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
RH-DX0247CEZZ	3-D752	AB		R
RH-DX0302CEZZ	3-D391			R
RH-DX0441CEZZY	3-D505	AB		R
RH-DX0476CEZZ	3-D701	AC		R
RH-DXA044WJZZ	3-D751	AB		R
RH-EX0263TAZZY	3-D810	AB		R
〃	3-D811	AB		R
〃	3-D812	AB		R
RH-EX0612GEZZY	3-D503	AB		R
RH-EX0615GEZZY	3-D715	AA		R
RH-EX0626GEZZY	3-D732	AB		R
RH-EX0630GEZZY	3-D802	AA		R
RH-EX0640GEZZY	3-D723	AA		R
RH-EX0667GEZZY	3-D603	AA		R
RH-EX0669GEZZY	3-D722	AA		R
RH-EX0676GEZZY	3-D201	AA		R
RH-EX0680GEZZY	3-D736	AA		R
RH-EX1393CEZZY	3-D801	AB		R
〃	3-D1085	AB		R
〃	3-D1086	AB		R
〃	3-D1089	AB		R
〃	3-D1802	AB		R
〃	3-D1803	AB		R
RH-PX0013PEZZ	3-D1001	AB		R
RH-VX0073CEZZ	3-VA701	AB		R
RMPTPA011WJZZ	3-PR701			R
RR-DZ0049CEZZY	3-R751	AB		R
〃	3-R752	AB		R
RRLYJ0089CEZZ	3-RY701	AG		R
RRMCGA257WJSB	6-	AN		R
RRMCUA022WJZZ	3-RMC1001	AG		R
RTRNFA137WJZZ	3-T602	AV		R
RTRNWA216WJZZ	3-T701	AL		R
RTRNZA058WJZZ	3-T603	AB		R
【 S 】				
SPAKCD666WJZZ	8-3	-		-
SPAKPA771WJZZ	8-6	-		-
SPAKXB620WJZZ	8-5	-		-
【 T 】				
TiNS-D307WJZZ	6-			R
TiNS-D322WJZZ	6-			R
TLABKA008WJZZ	8-4	-		-
TLABZB837WJZZ	8-7	-		-
【 U 】				
UBATU0247AJZZ	6-			R
【 V 】				
VB540ADAC1S1E	1-			R
VCCCCY1HH101JY	3-C841	AA		R
VCCCCY1HH220JY	3-C819	AA		R
〃	3-C847	AA		R
VCCCPA1HH101J+	3-C1015	AA		R
VCE9GA1HW105M+	3-C822	AB		R
〃	3-C825	AB		R
VCE9GA1HW475M+	3-C1014	AB		R
VCEA0A0JW107M+	3-C1001	AA		R
VCEA0A0JW108M+	3-C202	AB		R
VCEA0A0JW477M+	3-C1020	AB		R
VCEA0A1CW106M+	3-C835	AA		R
〃	3-C838	AA		R
〃	3-C3083	AA		R
VCEA0A1CW107M+	3-C834	AB		R
〃	3-C1007	AB		R
〃	3-C3080	AB		R
VCEA0A1CW226M+	3-C1003	AB		R
VCEA0A1CW336M+	4-C893	AA		R
VCEA0A1CW337M+	3-C807	AB		R
〃	3-C824	AB		R
VCEA0A1CW476M+	3-C201	AB		R
〃	3-C827	AB		R
VCEA0A1CW477M+	3-C301	AB		R
〃	3-C643	AB		R
VCEA0A1EW108M+	3-C393	AB		R
VCEA0A1EW227M+	3-C610	AB		R
VCEA0A1EW228M+	3-C756	AE		R
VCEA0A1EW476M+	3-C642	AB		R
VCEA0A1HW105M+	3-C310	AB		R
〃	3-C322	AB		R
〃	3-C603	AB		R
〃	3-C805	AB		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	3-C837	AB		R
〃	3-C843	AB		R
〃	3-C1012	AB		R
VCEA0A1HW106M+	3-C206	AB		R
VCEA0A1HW107M+	3-C505	AB		R
VCEA0A1HW335M+	3-C312	AB		R
VCEA0A1HW474M+	3-C305	AB		R
〃	3-C842	AA		R
VCEA0A1HW475M+	3-C602	AB		R
VCEA0A1HW476M+	3-C706	AB		R
VCEA0A1VW477M+	3-C511	AB		R
VCEA0A2EW336M+	3-C604	AB		R
VCEA9M1CW106M+	3-C304	AA		R
〃	3-C811	AA		R
VCEA9M1CW107M+	3-C817	AB		R
VCEA9M1CW336M+	3-C1868	AB		R
VCEA9M1CW476M+	3-C803	AA		R
〃	3-C829	AA		R
VCEA9M1HW105M+	3-C848	AA		R
VCEA9M1HW474M+	3-C820	AA		R
VCEA9M1HW475M+	3-C818	AB		R
VCEACA1HC335J+	3-C515	AB		R
VCFPVC2EC474J	3-C611	AB		R
VCFPVC3ZA772H	3-C607	AD		R
VCFYAA2AA224J+	3-C508	AC		R
VCFYF1HA563J+	3-C608	AB		R
VCFYFA1HA105J+	3-C720	AE		R
〃	3-C801	AE		R
〃	3-C840	AE		R
VCFYFA1HA223J+	3-C1849	AA		R
VCKYCY1CF224ZY	3-C830	AA		R
〃	3-C832	AA		R
〃	3-C845	AA		R
VCKYCY1CF474ZY	3-C1004	AB		R
VCKYCY1EF104ZY	3-C816	AA		R
〃	3-C823	AA		R
〃	3-C1016	AA		R
VCKYCY1HB102KY	3-C213	AA		R
〃	3-C1013	AA		R
〃	3-C1856	AA		R
VCKYCY1HB103KY	3-C3081	AA		R
VCKYCY1HB221KY	3-C1011	AA		R
VCKYCY1HB332KY	3-C839	AA		R
VCKYCY1HB471KY	3-C757	AA		R
VCKYCY1HB561KY	3-C1855	AA		R
VCKYCY1HB822KY	3-C313	AA		R
VCKYCY1HF103ZY	3-C203	AA		R
〃	3-C205	AA		R
〃	3-C207	AA		R
〃	3-C208	AA		R
〃	3-C209	AA		R
〃	3-C210	AA		R
〃	3-C802	AA		R
〃	3-C804	AA		R
〃	3-C806	AA		R
〃	3-C808	AA		R
〃	3-C809	AA		R
〃	3-C810	AA		R
〃	3-C814	AA		R
〃	3-C815	AA		R
〃	3-C826	AA		R
〃	3-C828	AA		R
〃	3-C836	AA		R
〃	3-C846	AA		R
〃	3-C1008	AA		R
〃	3-C1009	AA		R
VCKYCY1HF153ZY	3-C821	AA		R
VCKYPA1HB102K+	3-C391	AA		R
VCKYPA1HB103K+	3-C709	AA		R
VCKYPA1HB221K+	3-C708	AA		R
〃	4-C853	AB		R
VCKYPA1HB222K+	3-C711	AB		R
VCKYPA1HB331K+	4-C852	AB		R
VCKYPA1HB561K+	4-C851	AB		R
VCKYPA2HB101K+	3-C650	AB		R
VCKYPA2HB102K+	3-C512	AB		R
〃	3-C606	AB		R
〃	3-C750	AB		R
VCKYPH3DB561K	3-C752	AB		R
〃	3-C784	AB		R
VCQYTA1HM103J+	3-C392	AB		R
〃	3-C755	AB		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCQYTA1HM104J+	3-C1081	AB		R
VCQYTA1HM222J+	3-C710	AA		R
VCQYTA1HM563J+	3-C601	AA		R
VHD1SS244//-1Y	3-D602	AA		R
VHDHSS4148+-1Y	3-D203			R
〃	3-D601			R
〃	3-D710			R
〃	3-D803			R
〃	3-D806			R
〃	3-D1081			R
〃	3-D1091			R
〃	3-D1094			R
〃	3-D1095			R
〃	3-D1801			R
〃	4-D859			R
〃	4-D898			R
VHiAN17823A-1	3-iC303			R
VHiKA78R09AP1	3-iC601	AC		R
VHiM24C04W6-1Y	3-iC1003			R
VHiM61250CF1EQ	3-iC801	AS		R
VHiMM1501XN-1Y	3-iC3002			R
VHiSTRW5453-1	3-iC701	AM		R
VHiSTV9302A-1	3-iC501	AH		R
VP-DF100K0000Y	3-L801	AB		R
〃	3-L802	AB		R
〃	3-L803	AB		R
〃	3-L806	AB		R
VP-DF270K0000Y	3-L203	AB		R
VP-MK820K0000+	4-L851	AB		R
VP-XF150K0000Y	3-L804	AB		R
VP-XF1R2K0000Y	3-L204	AB		R
〃	3-L807	AB		R
VRD-RA2BE101JY	3-R462	AA		R
〃	3-R526	AA		R
〃	3-R812	AA		R
〃	3-R823	AA		R
〃	3-R824	AA		R
〃	3-R825	AA		R
〃	3-R1004	AA		R
〃	3-R1011	AA		R
〃	3-R1031	AA		R
〃	3-R1042	AA		R
〃	3-R1045	AA		R
〃	3-R1054	AA		R
〃	3-R1073	AA		R
VRD-RA2BE102JY	3-R301	AA		R
〃	3-R615	AA		R
〃	3-R616	AA		R
〃	3-R661	AA		R
〃	3-R1076	AA		R
VRD-RA2BE103JY	3-R311	AA		R
〃	3-R501	AA		R
〃	3-R524	AA		R
〃	3-R662	AA		R
〃	3-R1007	AA		R
〃	3-R1058	AA		R
〃	3-R1894	AA		R
VRD-RA2BE105JY	3-R838	AA		R
VRD-RA2BE121JY	4-R876	AA		R
〃	4-R877	AA		R
〃	4-R878	AA		R
VRD-RA2BE122JY	3-R525	AA		R
〃	3-R1855	AA		R
VRD-RA2BE152JY	4-R894	AA		R
VRD-RA2BE153JY	3-R722	AA		R
VRD-RA2BE154JY	3-R614	AA		R
VRD-RA2BE181JY	3-R638	AA		R
VRD-RA2BE221JY	3-R704	AA		R
VRD-RA2BE222JY	3-R1801	AA		R
VRD-RA2BE223JY	3-R603	AA		R
VRD-RA2BE271JY	4-R849	AA		R
VRD-RA2BE273JY	3-R733	AA		R
〃	3-R808	AA		R
〃	3-R1040	AA		R
VRD-RA2BE331JY	3-R637	AA		R
〃	4-R854	AA		R
〃	4-R855	AA		R
VRD-RA2BE332JY	3-R1055	AA		R
VRD-RA2BE391JY	3-R1013	AA		R
〃	4-R892	AA		R
VRD-RA2BE393JY	3-R602	AA		R
VRD-RA2BE470JY	3-R836	AA		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	4-R850	AA		R
〃	4-R851	AA		R
〃	4-R852	AA		R
〃	4-R864	AA		R
VRD-RA2BE472JY	3-R827	AA		R
〃	3-R829	AA		R
VRD-RA2BE473JY	3-R604	AA		R
〃	3-R1051	AA		R
VRD-RA2BE561JY	4-R891	AA		R
〃	4-R895	AA		R
VRD-RA2BE683JY	3-R304	AA		R
VRD-RA2BE821JY	3-R841	AA		R
〃	4-R889	AA		R
VRD-RA2EE472JY	3-R720	AA		R
VRD-RM2HD102JY	3-R608	AA		R
VRD-RM2HD104JY	3-R605	AA		R
VRD-RM2HD124JY	3-R753	AA		R
VRD-RM2HD151JY	3-R639	AA		R
VRD-RM2HD1R0JY	3-R507	AA		R
〃	3-R710	AA		R
VRD-RM2HD270JY	3-R609	AA		R
〃	3-R612	AA		R
VRD-RM2HD332JY	4-R880	AA		R
〃	4-R881	AA		R
〃	4-R882	AA		R
VRD-RM2HD333JY	3-R513	AA		R
VRD-RM2HD562JY	3-R514	AA		R
VRD-RM2HD680JY	3-R601	AA		R
〃	3-R607	AA		R
VRN-RL2HC100J	3-R621	AB		R
VRN-RL3AB1R2J+	3-R611	AB		R
VRN-RL3DB2R2J+	3-R302	AB		R
VRN-RL3LBR18J+	3-R606	AD		R
VRN-SV2HCR47J+	3-R726	AB		R
VRN-VV3AB8R2J+	3-R754	AB		R
VRN-VV3ABR22J	3-R391	AB		R
VRN-VV3DB1R0J+	3-R642	AB		R
VRN-VV3DB1R5J+	3-R503	AB		R
VRN-VV3DBR22J+	3-R706	AB		R
VRN-VV3DBR82J+	3-R705	AB		R
VRS-CY1JF000JY	3-R821	AA		R
〃	3-RJ15	AA		R
〃	3-RJ16	AA		R
〃	3-RJ18	AA		R
〃	3-RJ19	AA		R
〃	3-RJ26	AA		R
〃	3-RJ37	AA		R
〃	3-RJ40	AA		R
VRS-CY1JF101JY	3-R201	AA		R
〃	3-R202	AA		R
〃	3-R839	AA		R
〃	3-R1024	AA		R
〃	3-R1044	AA		R
〃	3-R1046	AA		R
〃	3-R1048	AA		R
VRS-CY1JF102JY	3-R1061	AA		R
VRS-CY1JF103JY	3-R618	AA		R
〃	3-R803	AA		R
〃	3-R843	AA		R
〃	3-R1009	AA		R
〃	3-R1032	AA		R
〃	3-R1034	AA		R
〃	3-R1036	AA		R
〃	3-R1041	AA		R
〃	3-R1063	AA		R
〃	3-R1064	AA		R
〃	3-R1065	AA		R
〃	3-R1074	AA		R
〃	3-R1081	AA		R
〃	3-R1096	AA		R
〃	3-R1854	AA		R
VRS-CY1JF104JY	3-R1027	AA		R
〃	3-R1043	AA		R
〃	3-R1098	AA		R
VRS-CY1JF105JY	3-R1062	AA		R
VRS-CY1JF122JY	3-R206	AA		R
VRS-CY1JF123JY	3-R617	AA		R
VRS-CY1JF124JY	3-R840	AA		R
〃	3-R1802	AA		R
VRS-CY1JF133JY	3-R520	AA		R
VRS-CY1JF183JY	3-R1002	AA		R
〃	3-R1008	AA		R

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	3-R1047	AA		R
〃	3-R1049	AA		R
VRS-CY1JF221JY	3-R207	AA		R
〃	3-R220	AA		R
〃	3-R833	AA		R
〃	3-R1072	AA		R
〃	3-R1851	AA		R
〃	3-R1852	AA		R
〃	3-R1853	AA		R
VRS-CY1JF222JY	3-R504	AA		R
〃	3-R804	AA		R
〃	3-R805	AA		R
〃	3-R806	AA		R
〃	3-R807	AA		R
VRS-CY1JF223JY	3-R816	AA		R
VRS-CY1JF271JY	3-R831	AA		R
〃	3-R1023	AA		R
VRS-CY1JF272JY	3-R315	AA		R
VRS-CY1JF274JY	3-R305	AA		R
VRS-CY1JF331JY	3-R208	AA		R
VRS-CY1JF332JY	3-R314	AA		R
〃	3-R366	AA		R
〃	3-R835	AA		R
〃	3-R1056	AA		R
VRS-CY1JF392JY	3-R209	AA		R
VRS-CY1JF393JY	3-R830	AA		R
VRS-CY1JF471JY	3-R828	AA		R
〃	3-R842	AA		R
VRS-CY1JF472JY	3-R1097	AA		R
〃	3-R1850	AA		R
VRS-CY1JF473JY	3-R303	AA		R
〃	3-R814	AA		R
〃	3-R815	AA		R
〃	3-R817	AA		R
〃	3-R1895	AA		R
〃	3-R1896	AA		R
VRS-CY1JF475JY	3-R847	AA		R
VRS-CY1JF561JY	3-R801	AA		R
〃	3-R1066	AA		R
VRS-CY1JF564JY	3-R365	AA		R
VRS-CY1JF680JY	3-R205	AA		R
VRS-CY1JF682JY	3-R802	AA		R
VRS-CY1JF750JY	3-R461	AA		R
VRS-CY1JF822JY	3-R832	AA		R
〃	3-R1003	AA		R
〃	3-R1006	AA		R
VRS-KT3LB391J	3-R631	AB		R
VRS-VV3AB331J+	3-R506	AB		R
VRS-VV3DB121J+	3-R756	AB		R
VRS-VV3DB124J	3-R702	AB		R
VRS-VV3DB153J	4-R859	AA		R
〃	4-R861	AA		R
〃	4-R863	AA		R
VRS-VV3DB682J+	3-R622	AA		R
VRS-VV3LB333J+	3-R216	AC		R
VS2SA1015Y/1E+	4-Q894	AB		R
VS2SA1530AR-1Y	3-Q804	AB		R
〃	3-Q805	AB		R
VS2SC2235Y/1E+	3-Q601	AB		R
VS2SC2735//1EY	3-Q201	AB		R
VS2SC3198-G-1+	3-Q603	AA		R
〃	3-Q753	AA		R
VS2SC3928AR-1Y	3-Q604	AB		R
〃	3-Q801	AB		R
〃	3-Q1001	AB		R
〃	3-Q1002	AB		R
〃	3-Q1073	AB		R
VS2SD468-C/-1+	3-Q751	AD		R
〃	3-Q752	AD		R
〃	3-Q754	AD		R
VSBF422++++-2+	4-Q853			R
〃	4-Q854			R
〃	4-Q855			R
VSP9050PA02WA	5-SP301			R
VSTT2140+++-F	3-Q602	AD		R
VTUVT1Y5UF201	3-TU201	AT		R

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